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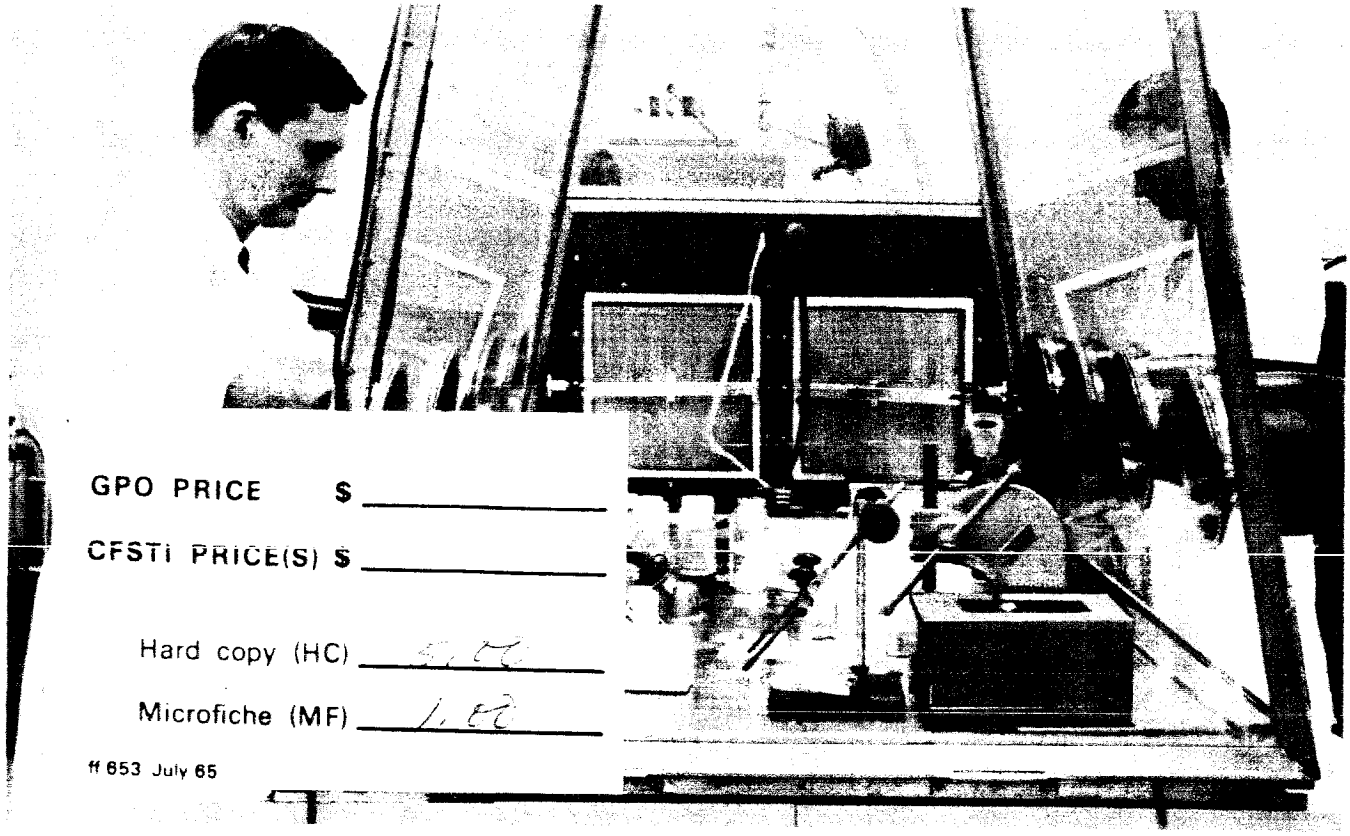
21 MARCH 1965



EXPERIMENTAL STUDY OF STERILE ASSEMBLY TECHNIQUES

VOLUME II - APPENDIXES B AND C TO FINAL REPORT

LOCKHEED MISSILES & SPACE COMPANY

A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION

SUNNYVALE, CALIFORNIA

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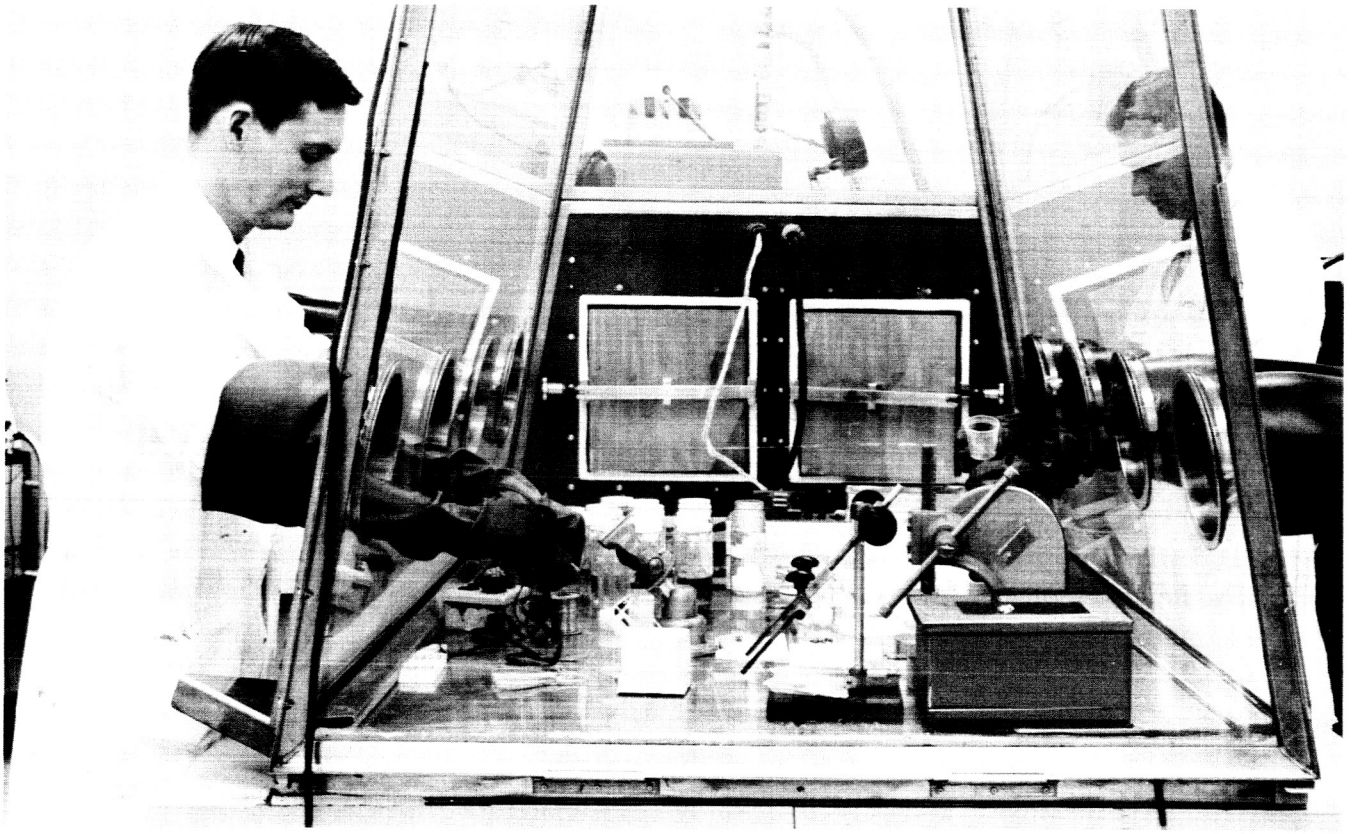

EXPERIMENTAL STUDY OF STERILE ASSEMBLY TECHNIQUES

VOLUME II · APPENDIXES B AND C TO FINAL REPORT

CONTRACT NO. JPL 950993

PREPARED FOR CALIFORNIA INSTITUTE OF TECHNOLOGY,
JET PROPULSION LABORATORIES • PASADENA, CALIFORNIA

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LOCKHEED MISSILES & SPACE COMPANY
A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION
SUNNYVALE, CALIFORNIA

FOREWORD

This document is Volume II of a report covering work accomplished by Lockheed Missiles & Space Company on the Experimental Study of Sterile Assembly Techniques (Contract JPL 950993) for the Jet Propulsion Laboratory, Pasadena, California, under the technical direction of Dr. J. J. McDade of JPL.

The main body of the report (Sections 1 through 15) and Appendix A (which contains the bacteriology reports compiled during the program) are grouped in Volume I under separate cover. This document, Volume II, includes:

- Appendix B – the rough, narrative, day-to-day log of the work conducted in the Sterilization Laboratory
- Appendix C – the rough log sheets maintained for the operations of the sterilization equipment

Appendix B
STERILIZATION LABORATORY ROUGH NARRATIVE LOG

4 November 1964

0800 Started refilling main glove box.

1600 Completed filling main glove box.

1730 Inserted specimens for 48-hour test for sterilization time period determination.

1800 Increased pressure in box to 1" H_2O and secured.

5 November 1964

0800 Checked specimen in glove box system (.5" H_2O at closing time yesterday).

0820 Filled cart with sterilant.

0830 Timed 48H, "A" group of resistors for sterility time period determination.

0834 Resumed filling large glove box system.

1320 Running alignment procedure V (page 14 MSA LIRA service manual) on MSA water vapor.

1330 Completed alignment of LIRA MSA water vapor zero = 0 Span = 4.75

1500 ACRE test station failed in service. Replaced 2 transistors on relay driver card.

1600 ACRE up and running.

1600 Commenced pumping out small glove box supplying ETO to large box with lock between box open.

1615 ETO is reading 22.5 water vapor = 80%

1630 ETO from small box reading 21.5 water vapor = 4.3 or over 80% shutting all systems down.

1700 Placed box at 1.4 inches and secured.

6 November 1964

0800 Pressure .4 in glove box. Drop of 1 inch overnight.

0945 a. Placed silica gel in glove box.

b. Placed 28 hr specimens in glove box. Placed vise and thermometer in box.

c. Removed rag from box.

d. Refilled box to .8 in. Found ETO bottle running at 50 psig which would indicate that bottle was about empty.

1030 Turned 48 HA specimens.

1100 Commenced test of box water vapor and ETO concentration.

1115 Setting zero and span on water vapor of MSA. Vapor reading was 100% on 1100 run.

1130 Found water vapor span at 7 reset to read 4.75. Found zero .2 off.

Ran sample of large box.
ETO reads 24 (100% concentration of sterilant gas). Water vapor 4.4 (at 90% humidity).

1200 Large box reads .4 (at 80% humidity).

1330 Purging sterilant gas in small box (SGB) with air from air bottles.

1335 Secured air to SGB.

1400 Placed 24 hour test specimens in glove box. Two groups - A and B. A group will be turned.

1700 Displaced ETO/Freon in SGB with sterile air. Used two flasks to make switch.

1730 Transferred test specimens to SGB. Made transfer of specimens to test tubes. Held test tubes high in box and switched rapidly. Test tube opened at 1 second. Remove test tubes from glove box system. Turned 24H and 28 HA's.

1800 Charged sterile air bottles. Charged main glove box with sterilant gas.

1830 Placed sterile air bottles in oven.

1843 Charged air line system with sterilant gas.

1900 Checked bottles cycling and secured for night.

2325 Placed 15 hour test specimens in main glove box (MGB)

2335 Raised MGB pressure to 2" H_2O and secured.

7 November 1964

1130 Inserted 4H specimens - two groups, A & B, as before. Turned 28H, 24H, 15 H "A" Specimens.

1145 Pressure in M.G.B. at .3" H_2O. Commenced filling M.G.B, exhaust from entry lock. Indicates 22.5% ETO in system at 80% humidity.

1155 Shifting suction to M.G.B. exhaust.

1205 Secured fill of M.G.B. at 1-1/2" H_2O
ETO concentration reads 22. H_2O vapor gage 3.8 or at 60%.

1345 Bottled 28 H specimens in S.G.B.

1400 Bottled 24H specimens in S.G.B.

1415 Bottled 15 H specimens in S.G.B.

1430 Bottled 4H specimens in S.G.B.

1500 Removed all bottled specimens from glove box system.

1515 Charged M.G.B. to 2" H_2O.

1516 Delivered specimens to Palo Alto

9 November 1964

0815	Connected N_2 to MSA and zeroed vapor and ETO units. Water vapor was at zero but ETO was at 2.5 divisions. Turned on humidifier valves 3 and 2 to span water vapor. Span reads 5.6 - reset to 4.7.
0830	Ran water test and ETO on main box. Water reads 65% and ETO 21.5.
0900	Removed process specimens, 50 resistors from oven. Commenced measuring resistor values.
1030	Placed process specimens, 28 p.c. cords in oven.
1330	Charged two sterile air flasks to 100 psig and placed in oven.
1345	Commenced charging sterilant gas to glove box system. Filling entire system with sterilant gas as received word that 2-4 hour and 2-15 hour sterilization time period determination samples are contaminated.
1400	Secured charging glove box system. ETO 100% at small box outlet.
1700	Filled gas generator with sterilant gas and secured box pressure 1.9" H_2O.

10 November 1964

0800	Main glove box and small box are at .2 inch. Adding "ETO." Small box and main box at same pressure because port between them is open. Ran test on ETO and water vapor. Water vapor read 3 divisions and ETO read 22 divisions. Charged box to 1 inch pressure.
1000	Tested large glove box for leaks with G.E. leak detector. Found only small seepage that has always been present in box.
1215	Placed 25 aluminum weighing cups and 25 nut and bolt assemblies in oven for heat sterilization.
1445	Shut off oven preparatory to removing air flasks.
1515	Removed air flasks from oven. Connected one to system. Flamed connections.
1520	Charged sterile air supply system with sterilant gas.
1600	Placed a bottle of alcohol in large box and cleaned floor of box. Added ETO to box and purged. Added pan to ETO inlet in box to keep floor of box free of sterilant gas. Removed rag and alcohol bottle. Also passed wrench in and out.
1700	Charged box to 1" H_2O - pressurized cart with sterilant gas.

11 November 1964

0800 Checked box pressure at .4. Decided to let box remain at slight positive pressure to determine decay. Plan to work on solder technique for remainder of day.

1235 Removed 25 aluminum weighing cups and 25 nut and bolt assemblies from oven.

1500 Continued to soak total box system with ETO/Freon.

1700 Decided to let box remain without charging over night, pressure .3" H_2O.

12 November 1964

0800 Box pressure still positive, .1" H_2O

0825 Charged box system to 1" with ETO/Freon. Zeroed MSA with air. ETO/Freon read 100%, humidity 60%.

1000 Samples of epoxy (WS 1359) placed in oven.

1300 Found ACRE test station not reading voltage. Amplifier No. 2 overloaded. Found bad tube (GBX7) from Amp. 1 and placed in Amp. 2.

1600 Place PC card PC002 in box and process spec for checking wire to component. Specimen test tubes, writing pad, pencil and five erasers.

13 November 1964

0800 Box pressure at .1 inch

0815 Isolated small glove box and commenced evacuation of ETO/Freon, and supply of sterile air.

0840 MSA reads 5 on ETO scale. "Feeding and bleeding" to reduce concentration of ETO.

1000 Epoxy specimens removed from oven. Still soft. Mixed accelerator with base material and potted a resistor to circuit board module.

1045 Placed components in glove box, consisting of:

(1) All resistor specimens for process specimen tests plus spares.

(2) Samples of epoxy mixture after heat sterilization. Each group of specimens labeled.

Glove box charged with ETO/Freon - MSA 100% ETO/Freon. 70% humidity.

1600 Charged two air flasks with air. Checked oven. Presently in use. Disconnected charged flasks from system. Connected sterile air flask.

1615 Charged cart with ETO/Freon.

1730 Secured glove box system after placing jars (for card to component tests) in box. Charged to 1.5" H_2O pressure with ETO/Freon 12.

14 November 1964

1600 Charged glove box to 2" H_2O. Was at .1". Placed two flasks of air in oven at 150° C. Charged ETO/Freon into gas generator system.

16 November 1964

0800	Main glove box at .1" H_2O. Small glove box at .4" H_2O (sterile air). Charged main glove box to 1" H_2O with ETO/Freon.
0815	Turned off oven. Turned on refrigerator. Cooling in oven.
1030	Removed bottles from oven. Hooked one bottle to system. Filled lines to bottle with ETO/Freon.
1315	Commenced final soldering operations in glove box. Soldering a wire to a component.
1330	Lost power to soldering iron after completing three samples. Found wiring good to outlet in glove box indicating an open soldering iron. Iron will need to be removed and cause of failure determined.
1345	Charged box with ETO/Freon. Measured concentration - 100%. Humidity 60%.
1350	Removed damaged soldering iron and silica gel from system. Inserted an additional iron, tin snips and clean rags. Removed sample of potting compound.
1410	Charged small glove box to 1.4" H_2O with sterile air.
1530	Started soldering wire to component specimens again in glove box.
1545	Second iron burned out.

17 November 1964

0800 Checked glove box pressure at .1 H_2O .6" H_2O sterile air in small glove box. Found 1st sterile gas bottle empty, switched to second bottle.

0830 Reported failure of soldering iron to tool engineering. Suggested an UNGAR iron. Will attempt to obtain one from vendor.

0900 Completed bench assembly of dip solder process specimens.

1030 Commenced heating in-box solder pot for process specimen assembly. (Component to card.)

1105 Secured sterile air supply to cart to prevent excessive loss due to leakage.

1110 Commenced in-box dip soldering. Pot is smoking. Temperature and pressure rising slowly. Pumping down to maintain pressure at 1" H_2O.

1125 Completed dip soldering ten process specimens. Temperature increased to 95°. Box was very smoky following operation. Noted that "copper brite" flux did not clean board as effectively in box as out--took two dips to coat board in some cases. While pumping down ETO/Freon read 23 (100%) and water vapor 51%.

1135 Pumped down to check concentration. ETO/Freon 23.5 (100%) Water vapor (at 63%).

1145 Placed metal parts for epoxy bonding procedure in large oven for heat sterilization procedure.

1345 Placed P.C. board specimen (for swagging and epoxy bonding) in oven for heat sterilization.

1435 Placed Hysol epoxy specimens in oven.

1435
a. Placed sterility check specimens (prior to dip soldering) in small glove box for bottling. Four cards -- 6, 7, 8, and 9.
b. Placed sterility resistors in small glove box for bottling (4 units).
c. Place 5 wires to component solder units in small glove box for cutting solder joint and bottling.
d. Placed side cutters, pencil, and box for bottles in SGB.

1500 Removed a, b, c, and d, above, from small glove box and placed in main glove box and after short delay (approximately 3 minutes) removed to outside. Items listed in "d" above remained in large glove box.

17 November 1964 (cont'd)

1530 Tool items listed in "a," "b," and "c," above to P. A. for sterility test.

1600 Received nut and bolt specimen from Palo Alto following inoculation.

1710 Charged glove box system to 1.5" H_2O. Filled cart with sterilant gas, and secured system.

18 November 1964

0800 Found M. G. B. at .1" H_2O S. G. B. at .4

0815 Charged M. G. B. to 1.6" H_2O and sampled atmosphere ETC - Freon 12 at 100%, Water vapor 60%.

0900 Labeled nut and bolt assemblies and assigned groups to functions. Assemblies 1-10 prepared for entry into glove box along with 11 bottles of broth.

1045 Removed performance test specimen, for dip soldering from glove box.
Inserted nut and bolt combination and broth into glove box.
Noticed pressure in S. G. B. rising slowly indicating leakage of ETC-Freon through S. G. B. sliding door. Secured Int. lock Swinging Door.

1345 Placed solder bars and wrench in M. G. B. Used wrench to disassemble nut-bolt combinations

1430 Connected to Small Glove Box. Pumped from, and supplied sterile air to S. G. B. to obtain M. S. A. reading - reads 7% ETO indicating that inner door (sliding door fastened to S. G. B.) does leak. Swinging door now secured. Will maintain S. G. B. pressure above M. G. B.

1530 Removed test specimens from oven consisting of:
(1) Metal strips for epoxy bonding test.
(2) Epoxy samples - Three type epoxies were tried, of these only one appeared useable. A sample bonding was tried.

1600 Placed dip solder sterility check specimens in small glove box along with jars of culture media. Specimens numbered 10, 11, 13, 14, 16.
Each board cut up using snips and placed in jars of media.

1630 Jars removed from small box into main box and removed from system transporting jars to PA for incubation.

1645 Main glove box filled with ETO.

1700 Secured.

19 November 1964

0800 Main Glove Box at .1" H_2O. Charged to 1.5" H_2O. ETO-Freon 100%. Humidity, 60%

0845 Charged S. G. B. to 2" H_2O.
Turned nut and bolt combinations in L. G. B.

0900 Found pressure building up in C. G. B. Secured flask

1005 Connected new sterile air cylinder to gas generator. Center cylinder now empty. Station 2 cylinder on service. Filled line to new cylinder with G50-Freon 12.

1630 Received word from Ruth Zeets that card specimens are contaminated.

1650 Opened small glove box after equalizing pressure. Commenced purge of sterile air from small glove box. Intend to re-sterilize small glove box, re-dip solder using spare items in glove box, take additional specimens using spare resistors in main glove box. Will sterilize over weekend. Nothing will enter on exit from glove box system until these tests have been run. Cause of contamination could have been:

(a) insufficient circulation of gas around components. Have now shifted specimen from plastic caps to cheese cloth, and will turn frequently.
(b) leaky jars - caps were found to leak during transportation to PA.
(c) cross contamination due to excessive entry and exit.

Taking a suction from the S. G. B. using the sterile air supply hose. This will fill the discharge system with sterilant gas.

1742 Secured charging Glove Box System. Suction from S. G. B. reads sterilant gas concentration 100%. Water vapor 50% Charged gas generator system with sterilant gas. Turned nut and bolt specimens.

1750 Secured. Box pressure .9. Still 1/4" liquid boiling. Should raise pressure to @ 1.5".

20 November 1964

0800 Entire glove box system soaking. Pressure at .3".

0830 Charged glove box system to 1.0" H_2O. Turned nut bolt-specimen, dip solder specimens and lifted all specimen jars.

0850 Sampled glove box system atmosphere, suction from small glove box, supply to large glove box. ETC-Freon 12 - 100%, Water vapor 63%.

1315 Turned all card samples.

1325 Charged card system with ETO-Froen
Charged above box system to 1" H_2O.

1630 Charged Glove box system and gas generator to 2" H_2O pressure.

23 November 1964

0800 Found positive box pressure .1" H_2O after weekend. Box not charged during this period. Charged box system to 1.3" H_2O.

0810 Turned resistors and card specimens.

0820 Shut both doors on interchange lock.

0845 Received call from Ruth Zeits. Specimens 10, 11, 13 and 14 are not contaminated. Turbidity in jars is probably caused by a substance in the card or solder.

1430 Assembled all nut and bolt specimens in glove box. No problems in assembly.

1435 Commenced assembly of component-to-card specimens (5).

1450 Completed dipping component-to-card specimens.

1500 Commenced purge of small glove box.

1520 Completed purge of small glove box. Water vapor section of LIRA out-of-commission.

1550 Commenced disassembly and bottling of 5 component-to-card specimens and 5 nut-bolt connection specimens.

1640 Removed above specimens from glove box system. Inserted 4 square component-to-card assemblies 25, 26, 27, 28 and remaining inoculated resistors.

1645 Charged 3 air flasks.

1710 Placed 3 air flasks in oven for heat sterilization.

1712 Opened inter-change lock doors. Commenced charge of entire glove box system with sterilant gas. Had to use a small amount of filter sterilized air (not heated) in order to equalize pressure.

1745 Oven air temperature at 150°C. Charged glove box system to 1" H_2O. Sterilant gas at full concentration. Secured.

24 November 1964

0800 Glove box system at .1" H_2O

0815 Charged glove box system to 1.5" H_2O. Charged gas generator with ETO.

0900 Took resistance reading on component to P. C. card assembly on units. Found resistance read low on high valued resistor units. 220 K read 150 K. Found 220 K was reading 220 K after cleaning with alcohol. Copper Brite flux was used.

1000 Soldered wire to component. Iron was Ungar. Soldering iron was in large glove box. Iron was on air approx. 45 min. No failure was experienced.

1030 Corrosion of soldering tip was experienced. By using a solder pot iron holder and cleaning iron with rosin core solder. No problem was encountered. (This was in glove box ETO ATM). Took epoxy bonding specimens - metal plate to metal plate and metal plate to P. C. card to Palo Alto.

1610 Turned all cards and components in M. G. B.

1630 Charged glove box system with ETO/Freon 12. Water vapor indicator back in service. A capacitor in amplifier was loose. Sterilant gas reads 23% (100%), Water vapor 53%.

1645 Turned oven down to sub-cooling prior to removing sterile air flasks.

1730 Removed bottles from oven and hooked to gas generator cart. Charged cart to 12 psi with sterilant gas.

25 November 1964

0800 Found glove box system pressure at .1" H_2O.

1300 Closed off lock to small glove box purged small box with sterile air using up all remaining air in flasks. Charged flasks with zero air from aero air bottles.

1600 Removed 5 component-to-wire process spec. from main glove box. Removed P. C. card 001 from M. G. B. Placed solder scraps in jar top and removed from M. G. B. Placed Inoculated Metal Plate and P. C. card Proc. Spec., and 10 bottles of culture media in M. G. B. Bread Board Circuit 001 was disassembled on bench and placed in Main Glove Box, after testing on ACRE. Terminals in Plastic cup, potting compound, and putty knife were placed in M. G. B.

1500 Ordered one bottle of zero air.

Placed soldering iron tips in Main Box (2 ea.).

1650 Charged gas generator system with sterilant gas.

1530 Placed 3 bottles of sterile air in oven for heat sterilization cycle. Charged M. G. B. to 1.8" H_2O pressure.

28 November 1964

1430 Removed 3 bottles of sterile air from oven. Connected to gas generator cart. Turned all specimens in M. G. B. Charged small glove box to 2. 5" H_2O. Charged Main Glove Box to 2. 4" H_2O.

30 November 1964

0800 Found main box pressure at .1" H_2O. Small box pressure at .1" H_2O. Suspect leak in small glove box, found pin hole leak in right glove. Patched with vinyl tape, pressure holding.

0900 Commenced marking components for card assembly in box and bench control.

0915 Used swaging tool on 15 specimens in glove box. No difficulty experienced on this operation. Operation took 8 minutes.

1500 Mixed epoxy with hardener and commenced bonding metal plate to P. C. card and metal plate to metal plate specimens.

1515 Transferred metal plate and P. C. card sterility check specimens (unbonded) and 15 swaged specimens to small glove box.

1520 Zerod ETO/Freon 12 section of M. S. A. and monitored air in small glove box - OK.

1530 Completed bottling sterility check specimens and staked specimens. Used 4 jars of sterile broth. Placed metal plates in one, P. C. card in another. Put half of staked specimens in one (# 1 to 8) and 1/2 in another (# 9 to 15). Removed from glove box system.

1600 Completed epoxy bonding operation. This was the longest continuous use of gloves in the box. It is about the limit. The epoxy bonding operation was more time-consuming by about a factor of 4 than for a similar operation on the bench, principally because of lack of sense of touch with heavy gloves. Initial specimens made in glove box were messy, but this improved with practice.
Removed the epoxy from box and bonded 5 specimens on the bench. Will bond additional specimens using non-sterile epoxy.

1700 Took staked specimens and sterile test specimens to Palo Alto for incubation and sterility checking.

1 December 1964

0800 Found M. G. B. pressure at .1" H_2O. Small G. B. pressure at .6.

0945 Placed 25 sets of P. C. card assemblies in oven for heat sterilization.

0950 Bonded 5 metal plate to metal plate and 4 metal plate to P. C. card specimens using epoxy from same batch but not heat sterilized or exposed to ETO/Freon in glove box.

1010 Sampled box atmosphere and charged to 1.0" H_2O pressure. ETO/Freon 100%, relative humidity 63%.

1300 Commenced assembly of P. C. card breadboard in box. Had one cold solder joint which ACRE isolated on first test run. Repaired joint and checked out.

1310 Took staked specimen log sheet to Palo Alto. Picked up box of sterile growth media.

1400 Commenced potting resistor to P. C. cards in box. Removed potting from box and potted 5 resistors to a card on bench. Potted 5 more using non-sterile (non-heated, not ETO) potting compound.

1615 Placed epoxy harding sterility check specimen in Small Glove Box, disassembled, and bottled for test.

1700 Took metal plate to metal plate and metal plate to P. C. card specimens to Palo Alto.

1710 Charged glove box system to 2.5" H_2O and secured.

2 December 1964

0800 Pressure in M. G. B. .2" H_2O. Increased pressure to 1.0" H_2O. Pressure in small box 2.5" H_2O.

0810 Developed check circuit to determine transistor characteristics.

1130 Removed 25 cards and components from oven following heat sterilization.

1140 Returned from Santa Cruz Test Base with digital voltmeter and AC-DC converter which had been loaned them last April.

1300 Checking out Digital Voltmeter and checking continuity on all components.

1730 Charged M. G. B. to 2" H_2O and secured.

3 December 1964

0800 Pressure in main box .1" increased to 1.2".
S. G. B. @.. 6"

1000 Passed 3 potted circuit boards #25, 27 and 28, into small box with 3 bottles of media, pliers and snips. Stripped potting from cards, tore into small pieces and put in media jar with circuit bound and resistor. Removed media jars from S. G. B. to M. G. B. and withdrew jars, bonding specimens and potted circuit board #26 from M. G. B.

1115 Brought bonding specimens (30) to test lab for pull test.

1645 Charged M. G. B. to 2.5"

4 December 1964

0800 Main Box pressure .1". Small box @.4 ". Charged M. G. B. to 5" and S. G. B. to .8".

1000 Brought 9 circuit boards and components to Palo Alto for inoculation. Circuit boards and components were dipped in alcohol prior to transporting. Also brought 3 jars media with potting samples to Palo Alto.

1530 Picked up printed circuit boards and components at PA.

1630 Placed printed circuit cards and components in glove box and spread out to begin sterilization soak.

December 7, 1964

0800 Assembled PC Card 011 in glove box.

1000 Mid-term oral presentation, Bldg. 101

1300 Partially assembled PC card 008

1400 Found Ungar soldering iron would not work. Placed new soldering iron in MGB (Ungar) and soldered Card 011.
Ceramic seal on iron was cracked.

1500 Tested card 011 found DC readings to be higher and AC to be lower than outside of box. Read box temperature at 85°F.

December 8, 1964

1000 Continued tests on assembled cards.

Received preliminary report that many test items are contaminated.

1330 Finished installation of thermo-wire on hose from ETO cylinder to MGB - Filled MGB to 2".

December 9, 1964

0800 MGB @ .1" H_2O. SGB @ 1.25" H_2O. Turned on heating wire and set @ 150°F. Filled MGB to 2" H20. Prepared to remove contaminated culture bottles from box.

Commenced test to determine cause of non-sterile test specimens.

1300 1. Took two resistors from card group #6, and one cap and bottled in main glove box.

2. Placed a bottle in small glove box. Held one bottle to air inlet on small box with cap off as air was discharged into small glove box.

Placed remaining parts from card group #6 in small box with bottles (bottles and parts went in at same time).

3. Placed one part in one bottle except for one bottle that has a cap and resistor. Nut and bolt for card group 6 was placed in bottle.

4. Removed all bottles from small box to large box from large box to room and took to Palo Alto for tests.

5. Placed new bottles (9) in main glove box.

December 10, 1964

0900 Ran test on PC card 002 on work bench.

Found temperature to be 78°, 3° more than box so moved test set up next to glove box. Temperature dropped 3° to same temperature that was in box. Found BB 001 varied 15 MV per degree F. over a change of 3°.

01700 Took atmosphere sample from glove box for chromatographic analysis for water vapor content.

Removed both gages on the locks to obtain fittings for obtaining a sample of air. Trying to locate a hose to run from air sampler to fixture.

December 11, 1964

15:00 Bottled J009, B009, F009, G009, H009, K009, and A009 in separate bottles in the large glove box. Hoo9 and K009 were bottled in test tubes.

15:30 Removed bottles from box and placed 8" pie pan in box and "hair" humidity gauge. Gauge is reading 40% R.H.

16:00 Took bottles to P.A. for sterility test.

December 14, 1964

08:00 Found MGB pressure at .1" H_2O. SGB at .6" H_2O charged MGB to .8" H_2O.

10:00 Placed tape and two strips of 10^2 spores in large box.

Four bottles of nutrient in large box, one of the two spore strips (100) were placed in each bottle (2). Dipped finger of main glove box glove in one jar of media. Transferred one bottle to small box and dipped finger of right glove in jar. Also placed pie pan in small box. Held pie pan over glove port with left glove. Removed right glove and replaced with new glove. Maintained positive pressure. Transferred bottle and pie pan to main glove box. Transferred four bottles from main box to room.

11:30 Started purging M.G.B. with ETO. Placed silica gel in M.G.B. and removed cover.

15:45 Opened lock from SGB to MGB;began purge to sterilize SGB. Completed @ 16:00.

16:00 Placed capacitors in oven for heat sterilization.

December 15, 1964

10:00 Purged large box and small box together ETO read 24 and water vapor read 2.8.

13:00 Continued to investigate cause of non-sterile specimens. Sterilizing entire glove box system.

December 16, 1964

08:00 Found box pressure at .1" H_2O. Box system being sterilized.

10:00 Placed 18 large bottles and two small bottles in glove box.
No bottles were in box prior to this time.
Placed humidity indicator in box to take reading.

10:45 Box at .4" started fill and purge.
Left box at 1.4" H_2O.

17:00 Found glove box at .5 in Filled to 2" before leaving
Secured ETO bottle and turned off heater.

December 17, 1964

08:00 Box system pressure at .1" H20. Charged to 1.5" H20.

11:00 Connected humidified sample connection of M.S.A. to small glove box. Ran zero gas and span gas through M.S.A. % water vapor section. Found span to be OK, but zero to be off (1.2). Re-adjusted zero.

Took a reading from small box going directly from box to M.S.A. (no pump) vented exhaust to room to obtain required differential pressure.

Reading at small box was 2.1% water vapor by volume.
Reading at entry port was 2.0% indicates M.S.A. is unreliable for relative humidity determination.

16:00 Made relative humidity measurement of M.G.B. read 30% R.H. Using an asperating hygrometer.

December 18, 1964

08:00 M.G.B. = .2 inches H_2O.

12:00 Turned fan on in M.G.B.

13:00 Placed suspension line for components in M.G.B.
Removed silica gel from M.G.B.

14:00 Hung all components on line including "T" series capacitors which were placed in M.G.B . at 12:00.
Placed paper clips in box (for use as hangers).

15:50 Inserted 300 ML distilled water into M.G.B.

16:30 Removed wet and dry bulb humidity indicator.

December 19, 1964

10:30 M.G.B. at .1" H_2O. S.G.B. at 1.3"
Filled to 2" in M.G.B .

20 December 1964

1530 M. G. B. at .1" H_2O S. G. B. at .7" H_2O. Bottled 10 capacitors in test tubes (also 1 spore strip) in M. G. B. removed. Inserted humidity indicator. Outside .DB. - 72.5° F. W. B. 61.5°F Reading on humidity indicator, in box.
D. B. - 74.0°F, W. B. 63.0°F - removed humidity indicator.

1600 Charged M. G. B. to 1.8" H_2O with sterilant gas. Flodded cart with sterilant after connecting supply lines. Took 10 samples to P. A. and placed in incubator (T001 to T010, 48 now capacitor sterile time period specimens). Muffen fan ran during period while in lab.

21 December 1964

0800 . 1 inch in large box. . 4 inch in small box turned on fan in box.
Charged box (large to 1. 0" in.

0900 Placed wet and dry bulb humidity indicator in M. G. B. Poured H_2O on solder pot and vaporized. Will continue to add water vapor until desired reading is achieved.

1000 Placed 3 sterile air flasks in oven at 150°C.

1300 Recalibrated MSA - changed amplifier from unit #2 to #1 found zero calibration is more satisfactory this way. Found that running ETO gas into the MSA and exhausting through a head of water in cart resulted in inaccurate span readings. Removed exhaust, hose, and vented MSA to room.

1530 Bottled 10-22 hour capacitors for sterilization time period determination.

1645 Took 10-72 hour capacitors to PA for inculation.

22 December 1964

0800 Main box pressure at .1" H_2O Small box pressure at .5" H_2O. Humidity 30%. Started fan.

0815 Charged Main Glove Box to 2.0" H_2O Commenced calibration of M. S. A.

1100 Placed J. P. L Hygrometer in large glove box and read humidity using outside indicator. Reads 45% - R. H.

1400 Found water vapor unit of MSA would not span. Refilled water bottles in back of unit. Unit still would not span except on gain of 5. But on gain of 5 zero would read more than span. Tested temp of 90° water vapor box. It was 105°F. Should be 90°. Readjusted Chromalox to 90°.

1500 Removed air bottles from oven.

1600 Tested new test fixture for ACRE run on bench. Fixture looked good.

23 December 1964

0800 Found box press at .1 inc" SGB at .4

0830 Placed wet and dry bulb RH in Main Glove Box
Fan in MGB ran all night and is still running.
Reading of RH in MGB with wet dry bulb is 35%.

28 December 1964

0900 Turned on soldering iron and hand solder PC cards 004 007 005 008 010. Cut PC card 007 in 3 pieces and placed in 3 bottles. Card 007 was dip soldered first. Placed all components of PC card 004 in bottles. Placed remaining parts (5 resistors, 1 card) of PC 009 in bottles. PC 004 and PC 009 were dip soldered with no component on them.

1000 Removed 13 test tubes and 9 bottles. PC 004 and 009 were cut in 1/2 and bottled. Placed bottle of Rosen from bench in MGB.

1100 Dip soldered remaining 4 cards with all components on cards. Temp. in MGB reached 90°F during dip soldering.

1500 MGB cooled to 75° checked out PC card 005 readings were low.

1600 Removed specimens from Glove Box and took to Palo Alto.

0800 MGB pressure at .1" H20. Charged to 1.5". SGB at .1. Increased pressure to .9" by inserting Rt Hand glove.

0815 Inserted W. & D. bulb thermometer in G.B. -R.H. 30%

0930 Placed sterile cotton holder in oven for heat sterilization.

1130 Removed W & D bulb thermometer from glove box. R.H. 35%. Charged Cart system with ETO/freon 12. (20 psi)

1300 Running ACRE checks on MGB assembled cards.

1600 Completed new bench check cable assembly.

12/30/64

0800 Found MBG at.1" H20 charged to 2" H20. SGB at .7". inserted humidity indicator. R.H. 32%

0815 Continued to run test on P.C. cards dip soldered in MGB . Readings have not stabilized. Will run test on bench assembled P.C. cards, which will include insertion and soak in M.G.B.

0930 Removed sterile cotton filter rig from oven.

0945 Inserted filter rig and sterile cotton into MGB for surface sterilization.

01300 Two ACRE problems: (1) Tape reader on test station would not stop on command from I .C.S. Found interference in command on program tape and auto command from manual buttons. As manual buttons perform no usefull function, decided to eliminate buttons from circuit. This was done by jumpering 3 relays in control mod. (2) Found no freq. measurement or T. & F. self check. Trouble was a blown fuse at + 15V in rear I.C.S. power supply. After replacement of fuse the + 15 was low at T & F. Adjusted + 15 for 15 at T & F. This should improve operation of T & F.

12/31/64

0800 At end of day, on 12/30/64, isolated entry lock to check for leaks. Found entry lock reading a slight vacuum and about .2" positive pressure in M.G.B. Both chambers have slight leaks, but experience has shown we can maintain a positive pressure over a 4 day period in the system. Charged M.G.B. to 2.0" H2O.

0830 Placed W & D bulb humidity indicator in MGB. Reads 31% R.H. Will allow indicator to remain in box to raise R.H. slightly by ev aporation from wick.

1000 Took 21 test card groups to Palo Alto for heat sterilization and inoculation.

1300 Assembled PC cards on bench (013, 014, 015, 016) APX. 30 min. required for each card assembly. Read each card 6 times on bread-board prior to assembly. Read 013 6 times after assembly. Read 011 in MGB. Readings were bad. Found dirty contacts on card cleaned card and obtained good readings.

1600 Read humidity in MGB 32%.

0800 MGB was at .2 recharged box to 1" H20. Turned fan on in box. SGB was at 1" and remains at 1".

0845 Placed R.H. indicator in MGB. R.H. 30%. Will leave indicator in box to allow R.H. to increase.

0915 Installed cotton filter in S.G.B.

1300 Placed 5 wire-to-wire solder specimens in MGB and soldered them. Removed specimens immediately after soldering. Placed 5 wire-to-wire solder spec. on bench outside MGB and soldered same.

1400 Took P.C. card specimens 050-059 to P.A. for heat sterilization and inoculation.

0830 to 1400 Ran test on PC 14, 15, 16 as assembled on bench and checked on bench. Ran test on PC 17 as a bread board then assembled PC 17 on bench.

1600 Received 21 inoculated circuits, not assembled, from Palo Alto lab.

1630 Removed R.H. indicator from MGB. R.H. 35%

1/5/65

0800 Found MGB pressure at .1" H20. Charged to 1.0" H20.

0830 Placed R.H. indicator in M.G.B. R.H. 35%.

0900 Removed R.H. indicator from M.G.B.

1700 Charged M.G.B. to 1.4" H20 and secured.

1/6/65

0800 Found MG pressure at .1" H20. SGB at .7" H20. Charged MGB to 1.0" H20. Placed R.H. indicator and card groups 029 and 030 and spore strip in M.G.B. R.H. 35%.

0930 Trouble shooting ACRE. Found:

1. Shorted transistor in power supply - replaced with substitute unit. Found open transformer lead in-CV section. Resoldered same.
1. Shorted 2N414 transistor on emitter follower card
1. Open 2N428 transistor on clock driver card for output of P2. Replaced both cards.

1315 Hung cards 029 and 030 on line in M.G.B. Humidity (R.H.) 36%.

1500 PC 018 was dip soldered on bench-no test run.

1600 Tested PC cards 31 to PC cards 39 with bread board on bench. PC card 038 would not read AC. Found coil to be OK. No further testing was done on 38 at this time. Card was replaced in bag and placed on bench. All other cards (029 through 039) were placed in M.G.B. and hung on line.

1710 Charged box to 1.2" H20. For last hour have been running checks on cards which have been in M.G.B. for some time. Note a large drop in voltage across coil on most cards, - cause not yet determined.

1/7/65

0800 Found M.G.B. pressure at .1" H20. S.G.B at .3. Charged M.G.B. to 2" H20. S.G.B. to 2° with sterile air.

0815 Placed R.H. indicator in M.G.B. R.H. 38%. Zero'd and spanned ETO cell of M.S.A.

1000 Sent Zero gas through MSA ETO side, and rezero'd unit span with gas from ETO bottle. Set at 23%. Read gas in MGB at 19%. Purged system with M.G.B. gas - read 23%.

1005 Took sample of ETO bottle on service to Palo Alto for analysis.

1150 Continued reading of cards made in M.G.B. Discovered that low readings are probably due to dirty contacts on card or in test fixitive, or both. When clips are used on components to extract test signals, readings are only off slightly from original bread board readings.

1500 Received call from Bill Tuttle, P.A. Chem. lab., that gas sample read 21.4% by volume ETO. Will repeat test tomorrow using gas chromatograph.

1630 Placed a 102 spare strip in bottle of sterile broth to see if spores will grow in lab environment without inoculation.

1655 Charged M.G.B. to 2.1" H20.

0800 Found M.G.B. at .1" H20. S.G.B. at .3" H20. Rigged R.H. indicator. R.H. 30%

0900 Assembled cards on bench and continued to check cards in box and bread boards being prepared for assembly in box or on bench.

1000 Obtained sample for chromatographic analysis of ETO concentration. Bottle on service being used.

1300 Obtained second sample for chromatographic analysis of bottle on service.

1400 Obtained sample from unused bottle for chromatographic analysis.

1515 Obtained sample from unused bottle for gas spectrometer analysis in P.A.

1530 R.H. 35% Shut R.H. indicator cap.

0800 Found M.G.B. at .1" H20. charged to .7" H20. S.G.B. at .8" H20.

0830 Rigged R.H. indicator. R.H. 30%. Noted jar in which 100 spores had been placed is contaminated. This jar was left sealed in the lab environment without incubation or agitation.

1130 Assembled, less dip soldering, 029 through 034 in M.G.B. Soldering iron heating unit failed in service.

1400 Took card groups 060 through 074 to Palo Alto for heat sterilization and inoculation.

1540 Returned from P.A. with cards 050 - 059. Have been heat sterilized and inoculated.

1600 Removed old iron from MGB with R.H. indicator. Purged entry lock with ETO before placing new element for soldering in glove box.

1/12/65

0800 Found glove box at .1" H20. Charged to .8" H20.

1100 Continued assembling printed circut cards. 47½w Ungar soldering iron heating heating element failed after 3 hr. of service.

1400 Replaced Ungar soldering unit that failed with new 37½w unit. Continuing assembly of PC cards.

1700 Completed assembly of card series 029 through 039 less dip soldering.

0800 Found M.G.B. pressure at .1" H20 S.G.B. at .2" H20. Commenced heating up M.G.B. solder pot to dip solder cards 027 through 039 (less 038)

0830 Commenced dip soldering cards 029 - 039 (Less 038)

1430 Commenced testing all cards M.F.G. in M.G.B.

1730 Secured testing cards. Cards are reading erratically; generally on the low side.

1/14/65

0800 M.G.B. gage isolated. Found vacuum in gage hose. Slight pressure in entry lock .1" H20 in M.G.B. .1" H20 in S.G.B. charged S.G.B. to 2.1" H20.

0830 Commenced checking cards made yesterday in M.G.B., and cards from past tests still in M.G.B. There seems to be a tendency for the cards to return to normal about 24 hours after manufacturing.

1415 Placed cards 030, 031, 032, 033, 034, 035, 036, 037, 039 in interchange lock. Kept card 029 in M.G.B. to run some component replacement tests. Card 038 failed following heat sterilization and is out of the system.

1605 Removed cards 002, 005, 008, 011, 012, 013 from M.G.B. for bench test Placed a set of non-heat sterilized and non-inoculated components in M.G.B. Will replace components on card 029 with these components one by one and note changes.

1/15/65

0800 Found M.G.B. at .1" H_2O. S.G.B. at .4" H_2O.

0830 Continued investigation of boards manufactured at various locations. Determined yesterday that cleaning boards with detergent rather than alcohol following dipping is more effective and that solder flux has a definite effect on the board readings.

0915 On bread-board setup, found a loose resistor connection which accounts for readings which vary at test point 10.

0930 Commenced bread-board check out of remaining inoculated and heat sterilized boards.

1130 Transferred boards 029-039 (less 038) and 20 bottles of growth media to interchange lock prior to S.G.B. for cut up and bottling this afternoon. Exchanged sterile air in small glove box by "feed-and-bleed".

1700 Placed the following sets of parts in MGB and hung on nylon cord + 2 spore strips.

PC 050, 051 053, 045, 046, 052, 055, 057, 054, 059.
Took 029-039 (less 038) to Palo Alto in 20 bottles + 1 bottle containing 2 spore strips.

1/18/65

0800 Found M.G.B. pressure at .1" H_2O. S.G.B. at .3" H_2O. Found nylon "clothesline" dropped over weekend. Parts on line are haphazardly confused. Will use these parts as sterility test specimens. R.H. 34%.

0830 Received call from Palo Alto. Jars 33-2, 37-2 and 39-2 are contaminated with B globigii. 30-2 is suspect. All these jars contained 1/2 PC. card, 4 capacitors and a coil.

0900 Restrung the clothesline using an aluminum bar to support the "door-side" end. Replaced the right hand glove in the S.G.B. which had a pin hole leak made when bottling the last half of card 39 on Friday. Prior to changing glove emptied one cylinder of air through the cotton filter, bottled the cotton, replaced the cotton, and re-installed the filter holder. Opened interchange lock and commenced sterilization of entire system.

1/19/65

0800 Found GB pressure at .1" H_2O. R.H. 38%. Started purge of box as continuation of 1/19/65 effort. Stopped at 8:35 when valves started to freeze. MSA reading 15.

0900 Commenced checkout of card groups. Went to Newark to pick up sample flask. Bottled 4 coils and 5 capacitors which had been in M.C.B. since Friday (15 Jan).

1300 Took bottled specimens to P.A. Picked up 16 jars of nutrient.

1500 Received sample bottle. Attempting to obtain a representative sample of gas with which to span M.S.A. Liquid tends to boil off Freon 12 first, cooling mixture below boiling point of ETO. Initial gas is rich in Freon, final rich in ETO.

1630 Placed cans in oven for heat sterilization.

1/20/65

0800 - 1700 Ran bread board tests on P.C. card groups using acre.

Filled out chart on status of 99 groups of parts in system.

1/21/65

0800 - 1700 Ran test on card groups in bread board form using acre.

1300 Removed plastic tape on 6 cap and placed in jars for sterile test. All operations taking place in M.C.B. used 6 jars.

1400 Took 5 P.C. cards, 6 jars with bare capacitors, 2 jars with capacitor's wrappings, and 5 bare capacitors to P.A. for incubation, will inoculate the 5 capacitors and 5 P.C. card circuits.

1700 Filled M.C.B. to 2" H_2O.

1/22/65

0900 Placed circuits 60 through 74 (less 65 and 70) in M.G.B. for sterilization. Tested circuits 80 through 88 on bench bread board taking four or more readings of each circuit. All parts marked by set number.

0905 Placed R. H. indicator in M.G.B. R.H. 38%.

1030 Placed circuits 47, 48, 49, 58 in M.G.B. for sterilization.

1600 Took R.H. reading; 36%. Capped water jar on R.H. indicator.

1/25/65

0800 Found M.G.B. at .1" filed to 2". Received word from P.A. that t. Celephane wrap on capacitors are contaminated. Continued to run card test bread board acre.

Completed cards 89 through 99.

1300 Paper program tape broke. Duplicated a new tape for acre.

1645 Placed all cards, 80 through 99 in box and sent to Palo Alto for inoculation.

1700 Filed M.G.B. to 2.6".

1/26/65

0800 Found box at .1" H_2O. Charged to 2.0". H_2O. Commenced assembly of circuits 60 through 74 (less 65 and 70) 47, 48, 49, 58 in M.G.B.

0900 Commenced work on changing plug in S.G.B. to fit test rig.

Commenced checkout of circuits 18, 19, 20, 21, 22. Assembled on bench.

1100 Placed circuits 18, 19, 20, 21, 22 in M.G.B. for surface sterilization. Also placed 5 bare and 5 scotch tape covered capacitors in M.G.B. Placed circuits 75, 76, 77, 78, and 79 in M.G.B. These circuits were checked out on bread board, inoculated, but not heat sterilized. Will test to see if more stable readings results after assembly. Also placed 12 jars of media in M.G.B.

1500 Prepared 5 scotch tape coated aluminum plates and 5 not coated for heat sterilization and inoculation in Palo Alto.

1600 Solder iron in M.G.B. failed. Replaced bad element with new element in M.G.B. could not remove tip from bad element. Placed tip from bench in M.G.B. to be used with new element.

1/27/65

0800 Found box pressure at .8" H_2O unexplainable. The fan was found to have a green substance deposited on the blades. Outward appearances indicated a fungi or algae formation. The fan was removed and taken to Palo Alto for analysis of this substance.

0900 Assembly of circuit boards continued. Bread boarding and ACRE checkout of PC 040-044 commenced.

1030 Reports were received from P.A. that 1) the green substance on the fan blades was not a fungus but merely a deposit possibly caused by the lubricant in the fan. 2) The gas analysis performed using a sample from the large ETO flask indicated 24.9% ETO concentration, considered within experimental error.

1300 P.C. components placed in glove box and process of suspending on line was initiated. Inserted also this time were jars of broth and capped test tube of the nutrient broth (P.C. cards 080 to 099).

1645 Placed humidity indicator in glove box R.H. 35%. Located Penngas cylinder on receiving dock. Will attempt to receive tomorrow.

1705 Purged box with fresh ETO and charged to 1.8" H_2O.

1-28-65

0800 Found main box pressure at 1. Charged to 2" 0 H_2O
Rigged R.H. Indicator R. H. 38%

0900 Continued assembling R. C. Cards.

0930 Placed new soldering iron tip in M.G.B .

1300 Soldering iron failed.

1600 Commenced assembling P.C. Cards in boxes on bench.

0800 Found M.G. box pressure at .5" H_2O.

0830 Continued assembling P.C. Card groups 13,14,15,16,17 in boxes on bench.

1100 Commenced ACRE check of card groups 18, 19, 20, 21, 22 (mfg. on bench) in M.G.B. readings show some rise in D.C. readings. B ottled 5 capacitors with tape covering and 5 without tape covering in M.G.B. + 1 SPORE strip.

1300 Commenced assembly of card groups 75, 76, 77, 78, 79.

1400 Purging S.G.B. with remaining 2 bottles of sterile air.

1645 Charged 2 bottles with air and one bottle with sterile N_2. Will attempt to place in oven on Saturday or Sunday.

1730 Charged MG.B to 2.2" H_2O.

1-30-65

1200 Placed 2 tanks air in oven and 1 tank N_2 in oven for heat sterilization cycle.

1215 Charged M. G. B. to 1.2" H_2O.
Filled cart with ETO.

0800 Found main box pressure at .1" H_2O
Charged 1.0" H_2O Continued preparations for card assembly

0830 Turned off heat sterilizing oven in preparation for sterile N_2 and air flask removal

Received Penn gas and connected to M.G.B.

0930 Removed two sterile air and 1 sterile N_2 flask from oven. Connected to cart. Charged cart to connecting point with Penn gas ETO/Freon 12.

1030 Checked out circuits 18-22 with ACRE and compared readings with those taken 1-29-65.

1300 Inserted circuits 40-45 and 50-55 in MGB. Also inserted jar containing inoculated metal strips to be used as control. New glove inserted to be sterilized before entry into SGB for replacement of left glove.

1500 Circuit assembly continued and circuit compnents newly entered into M GB hung on line.

1600 ETO cdor detected in atmosphere. Leak located in door seal. Sealing compound put over area of leak.

Feb 2, 1965

0800 Found MGB pressure at .05" H_2O and SGB at .1.
Filled MGB to 1" H_2O.

0930 Filled SGB to 4" with sterile air.

1000 Started leak check of MGB & SGB using SNOOP
Unable to detect leaks.

1100 Assembly of circuit boards continuing.
Rubber bag sample of MGB atmosphere taken for analysis.

1300 Test run of PC 022 using ACRE taken. Readings agreed with previous days readings.

1530 Gas analysis of MGB atmosphere inconclusive.
Second sample taken.
Glove box leaks still quite apparent.

1600 Small glove box pressurized to 6"H_2O. Leak detected at connector.
Screws on connector plugged.

Gas analysis still inconclusive. New method of obtaining sample will be devised.

1730 Placed 12 jars in MGB, 1 spore strip 1 soldering iron heating element, box gaskets, and card sets 24 thru and including 28 in plastic bags.
No removal of parts from bags at this time.

0800 Main glove box retained about .5" H_2O pressure overnight. SGB at .2" H_2O. Repressurized to 2"

0900 Circuit assembly continuing: P.C. boards 13-17 placed in metal cans with sponge rubber padding. Each circuit tested with ACRE.

1100 Sponge pieces cut to allow for packing 15 circuits in glove box

1330 Gas sample taken of MGB for analysis.

1430 Hand soldering heating element failed.
First placed in operation at 0900
Placed in glove box at 1700 on 2/2/65.

1500 Dipped soldered PC cards 040, 041, 042, 043. 044, 075, 076, 077, 078, and 079.
Box temperature reached 94°F. Operator of cart purging MGB while dipping in progress. Box became filled with smoke.

Feb 4, 1965

0800 Found positive pressure in both glove boxes.
Charged MGB to 2.0" H_2O.

0830 Bottled sterile cotton filter in SGB and replaced. This filter has had 2 flasks discharged through it when purging SGB.
Charged SGB to 2" H_2O.

0900 Commenced page of MGB system using Penn gas. Will continue to purge for remainder of day.

1300 Shifted ETO supply to the baffle area of MGB.

Feb. 5, 1965

0800 MGB Pressure was at .1 inches
Filled to 2" for start of purge cycle
SGB was at 0.1" filled to 2.0"

0900 Purged MGB to remove all remaining air. Purged by gas decantation method. (Fill with ETO and pumped every $\frac{1}{2}$ hour).

1130 Developed a crack in right side of MGB after pressure reached 6" H_2O+ in MGB.
Crack is in external lamination of 1/4" thick safety glass.
Applied plastic tape over entire length of crack.

1200 All purging operations were terminated for remainder of day.

Feb. 6, 1965 (Saturday)

1345 MGB at .3" H_2O Charged to .7" H_2O
SGB at .1" H_2O charged to 4.0" H_2O

Left Instructions for Monday Work

Feb. 8, 1964

0800 Placed solder pot and hand tools in small glove box soldering iron, flux bottle, and 25 cards.

I 18 19 20 21 22

II 47 48 49 80 81

VIII 58 66 67 82 83

IX 68 69 71 84 85

X 72 73 74 86 86

0900 Placed bottles in interlock (all bottles in MGB)

Place card tester box from MGB to SGB .

0930 Mixed potting compound groups. Placed 2 groups in oven to begin heat sterilization cycle.

Potted 5 resistors in rubber tubes for initial potting evaluation test.

1600 Dip soldered PC cards in Group II and VIII

1930 SGB Temp. 80°charged to 4" and secured.

Feb. 9, 1965

0900 Hand soldered cards that were dipped in SGB on 2-8-65.
Cards remain in SGB for testing.

1600 Measured card group # 7 & 8 in SGB.

1500 Placed can lids, clamps, and wires in oven at 150°C
for 24 hours.

1700 Filled SGB to.3"
Filled MGB to .3"

Feb. 10, 1965

0800 Found MGB at .1. Charged to .8" H_2O. SGB at .1"

0915 Hung 20 capacitors dipped in H_2O spore solution, 20 dipped in Acetone spore solution, and 20 with Acetone solution placed on capacitors using a pipette. Also hung 6 glass spore strips.

0935 Turned hangers on metal plate specimens in MGB

1600 Completed ACRE tests on cards 13, 14, 15, 16 and 17.

1645 Bottled 10 metal plate specimens, 5 with Scotch tape + 1 spore strip.

1705 Placed cans, clamps, sponges, and potting compound in MGB.

Feb. 11, 1965

0800 MGB at .1 SGB at .1

0930 Bottled 5 H_2O dipped, 5 Acetone dipped, 5 Acetone pippetted, and 1 glass spore strip in MGB.

1105 Commenced dip soldering cards in sterile N_2 after charging atmosphere in SGB.

Group IX & X
(68 69 71 84 85
72 73 74 86 87)

Hand soldered cards

Temperature in SGB reached 130 F.

1600 Placed 35 jars of media in main glove box.
Pumped MGB to .7" H_2O.

1730 Charged MGB to .5" H_2O after purging
Charged SGB to 4" H_2O with Sterile N_2.
Started fan in MGB and secured.

Feb. 12, 1965

0800 Found M.G.B. at .1" H_2O. Commenced purge cycle. Purged for 10 minutes and then charged to .6" H_2O. S.G.B. at .1" H_2O sterile nitrogen.

0830 Rigged M.G.B. humidity indicator R.H. 24%.
Bottled 5 water dipped, 5 acetone dipped and 5 acetone pipetted, capacitors.

0900 Cleaned group # 9 & 10 (N2 cards) in SGB with detergent & H_2O solution.

0930 Tested cards on ICS-ACRE. Found R.H. and rosin accumulation on cards. Unable to get a valid test.
Removed all cards in SGB to MGB with test fixture soldering iron hand tools.
Placed jars from lock in S.G.B.

1130 Placed 1 flask sterile air in oven for heat sterilization.

1400 Five assemblies potted in MGB using heat sterilized potting compound. The compound was inserted in glove box on 2-10-65

1500 Tested PC 82,58,81,80,67,66, and 48

1600 Placed 76, 79, 78, 77, 75 in cans in ETO in MGB. Removed from MGB to bench.

Feb. 15, 1965

0800 Found M.G.B. at .1" H_2O

Found SGB at .1" H_2O

0900 Bottled 5 capacitors dipped in water spore solution, 5 dipped in acetone pure solution, and 5 dipped in acetone spore solution applied by pipette.

0010 Ran I.C.S. test on ETO cards in can on bench.

0011 Ran second test on group 7 & 8 (air) in air. Group 8 ready for canning.

1300 Ran test on N_2 group. Test #1 in N_2.

1600 Purged MGB 2 cycles

1630 Tested RH in MGB → 25%.

Feb. 16, 1965

0800 M.G.B. at .1" H_2O .
S.G.B . at .1" H_2O
Charged M.G.B. to .8" H_2O.
S.G.B. to 1.5" H_2O with St N_2

0830 Bottled 5 wat er dipped capacitors, 5 acetone dipped capacitors, and 5 acetone pipette capacitors.

0845 Commenced taking readings on cards manufactured in sterile air and sterile N_2.

1300 Substituted Card #98 for Card NO 71 because of a bad component on Card #71. These are sterile N_2 assembled cards.

1400 Commenced canning cards in St N_2
Canned cards 72, 73, 74, 78, 81.

1530 Displaced sterile N_2 with sterile air.
Commenced canning cards in sterile air.

1715 Completed canning of cards 58, 66, 67, 82, 83 in sterile air. Purged box and secured.

1730 Commenced running 1st test on cards canned in St N_2.

1815 Completed runs in can of cards 72, 73, 74, 86, 87, looks bad

1830 Secured after purging M. G. B.

Feb. 17, 1965

0800 Found M.G.B. pressure at .1" H_2O

Found S.G.B . pressure at .4" H_2O

0830 Purged M.G.B . Rigged humidity gage and read humidity at 25%.

1300 Run #2 on ETO cans, N_2 cans, air cans.

Feb. 18, 1965

0900	Cut up and Bottled cards 88, 48, 49, 80, 47, 68 69, 98, 85 in MGB. Took to PA
1330	Bottled cards 60, 61, 62, 63, 64. They remain in LGB.
1800	Placed 48 jars of sterile growth media in MGB.

Feb. 19, 1965

0800	Found MGB at .1" H_2O SGB at .1"
1000	Placed portable ETO sterilizer with 10 capacitors in pure ETO (atmos. press.) in MGB
1400	Bottled 67 and 71 in SGB and took to PA Bottled 18, 19, 20, 21 and 22
1630	Removed Capacitors from portable ETO sterilizer in jars and removed jars and sterilizer from MGB
1700	Took capacitors to PA
1730	Placed portable ETO sterilizer in MGB box
1800	Changed MGB to .3, SGB to 3.0

February 22, 1965

0800 Found M.G.B. at .1" H_2O
S.G.B. at .1" H_2O

0830 Bottled 11 capacitors sterilized in pure ETO.

1100 Bottled PC 074, 075, 076, 077, 078, 079, 086, 087
Removed CHO 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
with PC 74 thru 79 and 86, 87, and took jars to P.A.

1530 Filled MGB to .4" H_2O

February 23, 1965

0800 Found MGB at .1" H_2O. S.G.B. at .1" H_2O

Allowed canned printed circuit cards to surface sterilize.

Worked on final report inputs.

February 24, 1965

0900 Bottled PC 013, 014, 015, 016, 017,

1645 PC 058, 066, 081, 082, 083, 084
Two paper spore strips
Two glass spore strips
Removed bottles from M.G.B. and took to P.A.
Placed plastic pure ETO cylinder in main glove box.

February 25, 1965

0800 M.G.B. .1" H_2O. S.G.B. .1" H_2O.

February 26, 1965

0800 M.G.B. at .1" H_2O. S.G.B . .1" H_2O.

1600 Bottled 10 capacitors which had been exposed to pure ETO and took to P. A.

Appendix C
EQUIPMENT ROUGH OPERATIONAL LOG

EQUIPMENT OPERATING LOG

DATE: 11/6/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.4	.4	N2A-S	Shut	Shut	Shut
0900	0	"	"	0	.4	.4	"	"	"	"
1000	0	"	"	0	1.2	1.2	"	"	"	"
1100	0	"	"	0	1.8	.2	"	¼ open	"	"
1200	0	"	"	0	1.8	.2	"	Shut	"	"
1300	0	"	"	0	1.8	.2	"	"	"	"
1400	0	Open	Open	0	.9	1.4	"	"	"	"
1500	0	"	"	0	.6	1.4	"	"	"	"
1600	0	"	"	0	.6	1.4	"	"	"	"
1700	0	"	"	0	.6	1.4	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Shut	Shut	Shut	Shut	Off	ETO	No Flow	-	-	.4
1900	"	"	"	"	"	"	"	-	-	.4
1000	"	"	"	"	"	"	"	-	-	.4
1100	"	"	"	"	"	"	On	Not Settled Out		1.8
1200	"	"	"	"	"	"	"	-	-	1.8
1300	"	"	"	"	"	"	"	-	-	1.8
1400	"	"	"	"	"	"	"	-	-	.9
1500	"	"	"	"	"	"	"	-	-	.6
1600	"	"	"	"	"	"	"	-	-	.6
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.4	72°F			1500	.6	74°			
0900	.4	72°			1600	.6	74°			
1000	.4	72°			1700					
1100	1.8	70°			1800					
1200	1.8	74°			1900					
1300	1.8	74°								
1400	1.4	74°								

EQUIPMENT OPERATING LOG

DATE: 11-9-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800 8	0	SHUT	SHUT	0	.2	.7	SHUT	SHUT	SHUT	SHUT
0900 9	0	"	"	0	.6	.7	"	"	""	""
1000 10	0	"	"	0	.6	.7	"	"	"	"
1100 11	0	"	"	0	.5	.7	"	"	"	"
1200 12	0	"	"	0	.4	.7	"	"	"	"
1300 13	0	"	"	0	.4	.7	"	"	"	"
1400 14	0	"	"	"	3"	3"	"	"	"	"
1500 15	0	"	"	"	2"	3"	"	"	"	"
1600 16	0	"	"	"	1.9"	2"	"	"	"	"
1700 17	0	"	"	"	1.9	2"	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800 8	SHUT	SHUT	SHUT	SHUT	OFF	ETD	NO Flow			.2
0900 9	"	"	"	"	"	"	"			.6
1000 10	"	"	"	"	"	"	"			.6
1100 11		"	"	"	"	"	"			.5
1200 12	"	"	"	"	"	"	"			.4
1300 13	"	"	"	"	"	"	"			.4
1400 14	"	"	"	"	"	"	"			3.0
1500 15	"	"	"	"	"	"	"			2.0
1600 16	"	"	"	"	"	"	"			1.9
1700	"	"	"	"	"	"	"			1.9
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.2	73%			1500	2.0	68°			
0900	.6	7.%			1600	1.9	65°			
1000	.6	2%			1700	1.9				
1100	.5	73°			1800					
1200	.4	73°			1900					
1300	.4	63°								
1400	3.0									

EQUIPMENT OPERATING LOG

DATE: 11-10-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0700										
0800	0	SHUT	SHUT	0	0.2	.2	N_2Air-S	SHUT	SHUT	SHUT
0900	"	"	"	"	1.0	1.0	"	"	"	"
1000	"	"	"	"	1.0	1.0	"	"	"	"
1100	"	"	"	"	.9	.9	"	"	"	"
1200	"	"	"	"	.8	.8	"	"	"	
1300	"	"	"	"	.6	.6	"	"	"	"
1400	"	"	"	"	.6	.6	"	"	"	"
1500	"	"	"	"	.6	.6	"	"	"	"
1600	"	"	"	"	.6	.6	"	"	"	"
1700	"	OPEN	OPEN	"	1.0	1.0	"	Cracked	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	ETO	NO FLOW	4	2	.2
0900	"	"	"	"	"	"	IN	15	3	1"
1000	"	"	"	"	"	"	"	"	"	1"
1100	"	"	"	"	"	"	"	"	"	1"
1200	"	"	"	"	"	"	"	10	2.8	.9
1300	"	"	"	"	"	"	"	10	2.8	.8
1400	"	"	"	"	"	"	"	"	2.8	.6
1500	"	"	"	"	"	"	"	"	2.8	.6
1600	"	"	"	"	"	"	"	"	2.8	.6
1700	"	"	"	"	ON	"	FLOW	23%	2.3	1.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.2	73°			1500	.6	73			
0900	1"	73°			1600	.6	73			
1000	1"	73°			1700	1.0	72			
1100	.9	73			1800					
1200	.8	73°			1900					
1300	.6	73°								
1400	.6	73°								

EQUIPMENT OPERATING LOG

DATE: 11-11-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	"	SHUT	SHUT	0	.4	.4	N_2 Air-S	SHUT	SHUT	SHUT
0900	"	"	"	"	.4	.4	"	"	"	"
1000	"	"	"	"	.4	.4	"	"	"	"
1100	"	"	"	"	.4	.4	"	"	"	"
1200	"	"	"	"	.4	.4	"	"	"	"
1300	"	"	"	"	.3	.3	"	"	"	"
1400	"	"	"	"	.3	.3	"	"	"	"
1500	"	"	"	"	.21	.21	"	"	"	"
1600	"	"	"	"	.21	.21	"	"	"	"
1700	"	"	"	"	.2	.2	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O % R	Int. L.P.
0800	SHUT	SHUT	SHUT	SHUT	OFF	ETO	NO FLOW			.4
0900	"	"	"	"	"	"	"			.4
1000	"	"	"	"	"	"	"			.4
1100	"	"	"	"	"	"	"			.4
1200	"	"	"	"	"	"	"			.4
1300	"	"	"	"	"	"	"			.3
1400	"	"	"	"	"	"	"			.3
1500	"	"	"	"	"	"	"			.21
1600	"	"	"	"	"	"	"			.21
1700	"	"	"	"	"	"	"			.2
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.4	74°			1500	.21	75°			
0900	.4	74			1600	.21	75°			
1000	.4	74			1700	.2	75°			
1100	.4	74			1800					
1200	.4	74			1900					
1300	.3	74								
1400	.3	74								

EQUIPMENT OPERATING LOG

DATE: 11-12-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800 8	0	SHUT	SHUT	0	.1	.1	N2Air-S	SHUT	SHUT	SHUT
0900 9	"	"	"	"	1.6	1.6	"	"	"	"
1000 10	"	"	"	"	"		"	"	"	"
1100 11	"	"	"	"	"		"	"	"	"
1200 12	"	"	"	"	"		"	"	"	"
1300 13	"	"	"	"	1.1	1.1	"	"	"	"
1400 14	"	"	"	"	1.0	1.0	"	"	"	"
1500 15	"	"	"	"	.9	.9	"	"	"	"
1600 16	"	"	"	"	.8	.8	"	"	"	"
1700 17	"	"	"	"	.9	.9	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Ster. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	SHUT	SHUT	SHUT	SHUT	OFF	ETO	NO FLOW	-	-	.1
1900	"	"	"	"	"	↓	↓	↓	↓	1.6
1000	"	"	"	"	"					↓
1100	"	"	"	"	"					
1200	"	"	"	"	"	↓	↓	↓	↓	
1300	"	"	"	"	"					↓
1400	"	"	"	"	"	"	"	"	"	1.1
1500	"	"	"	"	"	"	"	"	"	.9
1600	"	"	"	"	"	"	"	"	"	.8
1700	"	"	"	"	"	"	"	"	"	.9
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	73°f			1500	.9	75°			
0900	1.6	↓			1600	.8	75°			
1000	↓	↓			1700	.9	74°			
1100					1800					
1200	↓	↓			1900					
1300	1.1	74°								
1400										

EQUIPMENT OPERATING LOG

DATE: 11-13-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	SHUT	SHUT	0	.2	.5	N_2 Air-S	SHUT	SHUT	SHUT
0900	4	SHUT	OPEN	0	1.0	2	"	"	"	OPEN
1000	4	"	"	0	1.0	2	"	"	"	"
1100	4	"	"	0	1.0	2	"	"	"	"
1200	4	"	"	0	1.0	2	"	"	"	"
1300	4	"	"	0	1.0	1.9	"	"	"	"
1400	4	"	"	0	1.0	1.8	"	"	"	"
1500	4	"	"	0	1.0	1.8	"	"	"	"
1600	22	OPEN	OPEN	0	.7	1.7	"	"	"	"
1700	0	"	"	0	1.6	1.7	N_2/Air-S	"	"	OPEN
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	SHUT	SHUT	SHUT	SHUT	OFF	AR-ETO	NO FLOW	-	-	.2
1900	OPEN	"	"	"	"	"	NO FLOW			1.0
1000	"	"	"	"	"	"	NO FLOW			1.0
1100	"	"	"	"	"	"	NO FLOW			1.0
1200	"	"	"	"	"	"	NO FLOW			1.0
1300	"	"	"	"	"	"	NO FLOW			1.0
1400	"	"	"	"	"	"	"			1.0
1500	"	"	"	"	"	"	"			1.0
1600	SHUT	"	"	"	"	ETO	NO FLOW			.7
1700	OPEN	"	"	"	"	ETO	"			1.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.2	73			1500	1.0	74			
0900	1.0	73			1600	.7	74			
1000	1.0	73			1700	1.6	74			
1100	1.0	74			1800					
1200	1.0	74			1900					
1300	1.0	74								
1400	1.0	74								

EQUIPMENT OPERATING LOG

DATE: 11 16 64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	OPEN	0	.1	.4	N_2 AIR-S	SHUT	SHUT	OPEN
0900	0	"	"	"	1.0	.4	"	"	"	"
1000	0	"	"	"	.7	.4	"	"	"	"
1100	0	"	"	"	.65	.6	"	"	"	"
1200	0	"	"	"	.6	.6	"	"	"	"
1300	0	"	"	"	.6	.6	"	"	"	"
1400	0	"	"	"	.6	.6	"	"	"	"
1500	13.0	SHUT	OPEN	0	1"	1.4"	"	"	"	"
1600	13.5	SHUT	OPEN	0	.5	1.45	"	"	"	"
1700	"	"	"	0	1.5	1.4	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	ETO	NO FLOW			.1
0900	"	"	"	"	"	"	"			1.0
1000	"	"	"	"	"	"	"			.7
1100	"	"	"	"	"	"	"			.65
1200	"	"	"	"	"	"	"			.6
1300	"	"	"	"	"	"	"			.6
1400	"	"	"	"	"	"	"			.6
1500	"	"	"	"	"	ETO-AIR	"	"	"	1"
1600	"	"	"	"	"	"	"	"	"	.5
1700	"	"	"	"	"	"	"	"	"	1.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	73°F			1500	1"	74°F			
0900	1.0	73°F			1600	.5	74°F			
1000	.7	73°F			1700	1.5	74°			
1100	.65	73F			1800					
1200	.6	73°F			1900					
1300	.6	73°F								
1400	.6	73°F								

EQUIPMENT OPERATING LOG

DATE: 11 17 64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	14	SHUT	OPEN	0	.1	.4	N_2AIR-S	SHUT	SHUT	OPEN
0900	14	"	"		1.0	.6	"	"	"	"
1000	14	"	"		.6	.6	"	"	"	"
1100	5	SHUT	SHUT	0	.9	.8	"	"	"	"
1200	2	SHUT	SHUT	0	1.0	.8	"	"	"	"
1300	0	SHUT	SHUT	0	.3	.8	"	"	"	"
1400	0	"	"	0	.2	.9	"	"	"	"
1500	13	OPEN	SHUT	0	.6	1.2	"	"	"	"
1600	13	"	"	0	.6	1.2	"	"	"	"
1700	13	SHUT	SHUT	0	1.5	1.2	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	ETO-AIR	NO FLOW			.1
0900	"	"	"	"	"	"	"			1.0
1000	"	"	"	"	"	"	"			.6
1100	"	"	"	"	"	ETO	"			.9
1200	"	"	"	"	"	ETO	"			1.0
1300	"	"	"	"	"	ETO	"			.3
1400	"	"	"	"	"	ETO	"			.2
1500	"	"	"	"	"	ETO-AIR	FLOWS.G.B.	0	30%	.6
1600	"	"	"	"	"	"	No FLOW			.6
1700	"	"	"	"	"	ETO	NO FLOW			1.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	73°			1500	1.2	74°			
0900	1.0	73°			1600	.6	74°			
1000	.6	73°			1700	1.5	74°			
1100	.9	76			1800					
1200	1.0	78°			1900					
1300	3	76°								
1400	.2	76°								

EQUIPMENT OPERATING LOG

DATE: 11/18/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	SHUT	SHUT	0	.1	.4	N_2 Air Sp	SHUT	SHUT	OPEN
0900	0	"	"	"	1.6	.4	"	"	"	"
1000	0	"	"	"	1.6	.4	"	"	"	"
1100	0	"	"	"	1.5	.5	"	"	"	"
1200	0	"	"	"	1.3	.8	"	"	"	"
1300	0	"	"	"	1.1	1.0	"	"	"	"
1400	0	SHUT	SHUT	0	1.0	1.6	N_2 Air-S	SHUT	SHUT	OPEN
1500	0	"	"	"	1.0	1.5	"	"	"	"
1600	0	"	"	"	1.0	1.4	"	"	"	"
1700	0	"	"	"	1.5	1.4	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	ETO	NO FLOW	-	-	.1
0900	"	"	"	"	"	"	"	-	-	1.6
1000	"	"	"	"	"	"	"	-	-	1.6
1100	"	"	"	"	"	"	"	-	-	1.5
1200	"	"	"	"	"	"	"	-	-	1.3
1300	"	"	"	"	"	"	"	-	-	1.1
1400	OPEN	SHUT	SHUT	SHUT	OFF	ETO	NO FLOW	-	-	1.0
1500	"	"	"	"	"	"	"	-	-	1.0
1600	"	"	"	"	"	"	"	-	-	1.0
1700	OPEN	"	"	"	"	"	"	-	-	1.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	73			1500	-	73			
0900	1.6	73			1600	-	73			
1000	1.6	73			1700	-	73			
1100	- *	73			1800					
1200	-	73			1900					
1300	-	73								
1400	-	73								

* Secured Interchange Lock Door
To MGB = Indications of Leakage

EQUIPMENT OPERATING LOG

DATE: 11-19-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.1	.4	N2/Air-S	Shut	Shut	Open
0900	4	open	"	"	1.5	2"	"	"	"	"
1000	1	"	"	"	1.3	1.8	"	"	"	"
1100	2	"	"	"	1.2	1.8	"	"	"	"
1200	0	"	"	"	.8	2.1	"	"	"	"
1300	0	"	"	"	.7	2.1	"	"	"	"
1400	0	"	"	"	.7	2.1	"	"	"	"
1500	0	Open	"	"	.65	2.0	"	"	"	"
1600	0	"	"	"	.65	2.0	"	"	"	"
1700	0	"	"	"	1.0	1.0	ETOS	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	ETO	No Flow	-	-	.1
1900	"	"	"	"	"	"	"	-	-	1.5
1000	"	"	"	"	"	"	"	-	-	1.3
1100	"	"	"	"	"	"	"	-	-	1.2
1200	"	"	"	"	"	"	"	-	-	.8
1300	"	"	"	"	"	"	"	-	-	.7
1400	"	"	"	"	"	"	"	-	-	.7
1500	"	"	"	"	"	"	"	-	-	.65
1600	"	"	"	"	"	"	"	-	-	.65
1700	"	"	"	"	"	"	Flow	14%	2.0	1.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800 *	-	72			1500	-	73			
0200	-	72			1600	-	73			
1000	-	72			1700	1.0	73			
1100	-	72			1800					
1200	-	73			1900					
1300	-	73								
1400	-	73								

*Secured both doors

EQUIPMENT OPERATING LOG

DATE: 11-20-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	Open	.3	.3	N2Air-S	Shut	Shut	Open
0900	0	"	"	"	1.5	1.5	Eto-S	"	"	"
1000	0	"	"	"	1.4	1,.4	"	"	"	"
1100	0	"	"	"	1.2	1.2	"	"	"	"
1200	0	"	"	"	1.0)	1.0	"	"	"	"
1300	0	"	"	"	.8	.8	"	"	"	"
1400	12	"	"	0	.7	.7	"	"	"	"
1500	10	"	"	0	.6	.7	"	"	"	"
1600	10	"	"	"	.5	.5	N2AIR	"	"	"
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	ETO	No Flow	-	-	.3
0900	"	"	"	"	"	"	"	-	-	1.5
1000	"	"	"	"	"	"	"	-	-	1.4
1100	"	"	"	"	"	"	"	-	-	1.2
1200	"	"	"	"	"	"	"	-	-	1.0
1300	0	"	"	"	"	"	"	-	-	.8
1400	"	"	"	"	"	"	"	-	-	.7
1500	"	"	"	"	"	"	"	-	-	.6
1600	"	"	"	"	"	STA-1	"	-	-	.5
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	.3	73			1500	.7	74			
0200	1.5	73			1600	.5	74			
1000	1.4	73			1700					
1100	1.2	73			1800					
1200	1.0	74			1900					
1300	.8	74								
1400	.7	74								

EQUIPMENT OPERATING LOG

DATE: 11-23-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	O	Open	Shut	O	.1	.1	N_2Air-S	Shut	Shut	Open
0900	↑	↑	↑	↑	1.3	1.1	↑	↑	↑	↑
1000					.9	1.2				
1100					.8	1.5				
1200					.7	1.6				
1300					.6	1.6				
1400	↓			↓	.5	1.6		↓	↓	
1500	1	↓		2	.4	2.0		CRACKED	CRACKED	
1600	1	Shut		0	.3	1.0		Shut	Shut	
1700	0	"	↓	0	1.0	1.0	↓	"	"	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	LH_2 %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-1	No Flow	-	-	.1
0900	↑	↑	↑	↑	↑	↑	↑	↑	↑	1.3
1000										.9
1100										.8
1200										.7
1300										.6
1400					↓	↓	↓	↓	↓	.5
1500					On	STA-1	Flow	5%	o.o.c	.4
1600					Off	STA-2	No Flow	-	-	.3
1700	↓	↓	↓	↓	"	None	"	-	-	1.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1*	72			1500	-	79			
0900	-	72			1600	-	77			
1000	-	73			1700	-	74			
1100	-	73			1800					
1200	-	74			1900					
1300	-	74								
1400	-	74								

* Doors secured on interchange lock.

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	O	Open	Open	O	.1	.2	ETO-S	Shut	Shut	Shut
0900	↑	↑	↑	↑	1.2	1.2	↑	↑	↑	↑
1000					1.0	1.0				
1100					.9	.9				
1200					.6	.6				
1300					.5	.5				
1400					.5	.5				
1500					.4	.4				
1600					.3	.3				
1700	↓	↓	↓	↓	1.5	1.5	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Str. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Shut	Shut	Shut	Shut	Off	None	NoFlow	-	OOC	.1
1000	↑	↑	↑	↑	↑	↑	↑	↑	↑	1.2
1000										1.0
1100										.9
1200										.6
1300										.8
1400										.5
1500										.4
1600										.3
1700	↓	↓	↓	↓	↓	↓	↓	↓	↓	1.5
1800										
1900										

TIME	Int. L.P.	M.B. Temp				Int. L.P.	M.B. Temp.			
0800	.1	73			1500	.4	75			
0900	1.2	73			1600	.3	75			
1000	1.0	74			1700	1.5	74			
1100	.9	74			1800					
1200	.6	74			1900					
1300	.5	75								
1400	.5	75								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Open	None	.1	.1	ETO Spot	Shut	Shut	Open
0900	↑	↑	↑	↑	1.5	1.5		↑	↑	↑
1000					1.4	1.4				
1100					1.3	1.3				
1200	↓	↓		↓	1.2	1.2		↓	↓	
1300	14	Shut	↓	2	1.0	2.0	N2Air-S	Cracked	Cracked	↓
1400	0	"	Shut	0	1.5	2.0	↑	Shut	Shut	Shut
1500	0	"	"	0	1.4	1.8		"	↑	↑
1600	0	Closed	Closed	None	1.2	1.4		Closed	↓	↓
1700	10	Cracked	Cracked	None	.8	1.0	↓	"	Shut	Shut
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	None	NoFlow	No Flow	No Flow	.1
1000	↓	↓	↓	↓	↓	↓	↓	↓	↓	1.5
1000										1.4
1100										1.3
1200					↓	↓	↓	↓	↓	1.2
1300					On	Sta-2	Flow	4%	2.8	1.0
1400					off	None	NoFlow	-	-	1.5
1500	↓	↓	↓	↓	"	"	"	"	"	1.5
1600	Closed	Closed	Closed	Closed	Closed	None	"	No Flow	NoFlow	1.2
1700	"	"	"	"	"	"	"	"	"	.8
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	76			1500	-	76			
0900	1.5	76			1600	-	76			
1000	1.4	76			1700	-	76			
1100	1.3	76			1800					
1200	1.2	76			1900					
1300	-*	76								
1400	-	76								

* Both doors on same lock

EQUIPMENT OPERATING LOG

DATE: 11-30-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Open	"0"	.1	.1	N_2 AiR-S	Shut	Shut	Shut
0900	20	"	Shut	"	1.5	3.5	"	"	"	Open
1000	10	"	"	"	1.1	3.5	"	"	"	"
1100	2	"	"	"	.7	3.3	"	"	"	"
1200	2	"	"	"	.7	3.5		"		
1300	2	"	"	"						
1400	2	"	"	"	.8	3.9	N2AIR	Shut	Shut	Open
1500	2	"	"	"		4.0	"	"	"	Open
1600										
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stat. B.P. Pos.	Pump	On Serv.	M.S.A.	MTO %	H_2O %	Int. L.P.
0800	Shut	Shut	Shut	Shut	Off	Sta-1	NoFlow			.1
1000	Open									1.5
1000	.7					↓				1.1
1100	Open					Sta-1				.7
1200	↓					↓				.7
1300	↓	↓	↓	↓	↓	↓	↓			.8
1400	Open	Shut	Shut	Shut	Off	Sta-1	NoFlow			.9
1500	"	"	"	"	"	Sta-1	"			.9
1600										
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	*	75			1500	—	76			
0900	—	75			1600					
1000	—	75			1700					
1100	—	75			1800					
1200	—	76			1900					
1300	—	76								
1400	—	76								

*Interchange Lock Isolated

EQUIPMENT OPERATING LOG

DATE: 12-1-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.05	.6	N_2 Purge	Shut	Shut	Open
0900	↑	↑	↑	↑	.5	.6	↑	↑	↑	↑
1000					.5	.6				
1100					.5	.6				
1200					1.3	2.7				
1300					1.2	2.5				
1400					2.8	2.6				
1500					Gage Off	2.3				
1600					"	1.2				
1700	↓		↓	↓	"	3.4	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	Sta-1	No flow	-	-	.05
0900	↑	↑	↑	↑	↑	↑	↑	↑	↑	.5
1000										.5
1100										.5
1200										1.4
1300										1.4
1400										1.2
1500										2.8
1600										-
1700	↓	↓	↓	↓	↓	↓	↓	↓	↓	-
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75°			1500	-	75			
0900	↑	75°			1600	-	75			
1000		75°			1700	-	75			
1100		75°			1800					
1200		75°			1900					
1300		75°								
1400	↓	75°								

EQUIPMENT OPERATING LOG

DATE: 12/2/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.2	2.5	N2Air3	Shut	Shut	Open
0900	0	↓	↓	0	1.0	2.5	↓	↓	↓	↓
1000	0			0	.9	2.5				
1100	0			0	.8	2.5				
1200	0			0	.7	2.5				
1300	0			0	.6	2.5				
1400	0			0	.6	2.5				
1500	0			0	.5	2.5				
1600	0			0	.4	2.5				
1700	0	↓	↓	0	.3	2.4	↓	↓		↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Steer. B.P. Pos.	Pump	On Serv.	M.S.A.	MTO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	Sta-1	NoFlow			.2
1900	↓	↓	↓	↓	↓	↓	↓			1.0
1000										.9
1100										.8
1200										.7
1300										.6
1400										.6
1500										.5
1600										.4
1700	↓	↓	↓	↓	↓	↓	↓			.3
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800		75			1500		76			
0900		75			1600		76			
1000		75			1700		77			
1100		75			1800					
1200		75			1900					
1300		75								
1400		75								

EQUIPMENT OPERATING LOG

DATE: 12/3/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.6	N2Air	Shut	Shut	Open
0900	0			0	1.1	.6				
1000	0			0	.5	2				
1100	0			0	.2	1.8				
1200	0			0	.1	1.8				
1300	0			0	1.0	1.8				
1400	0			0	1.0	1.8				
1500	0			0	.8	1.8				
1600	0	▼	▼	0	.6	1.8	▼	▼	▼	▼
1700	0	Open	Shut	0	2.4	2	N2Air	Shut	Shut	Open
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Ster. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Sta-1	NoFlow			.1
0900										1.1
1000										.5
1100										.2
1200										.1
1300										1.0
1400										1.0
1500										.8
1600	▼	▼	▼	▼	▼	▼	▼			.6
1700	Open	Shut	Shut	Shut	Off	Sta-1	NoFlow			2.4
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800		75			1500		76			
0900		75			1600		76			
1000		75			1700		76			
1100		75			1800					
1200		75			1900					
1300		75								
1400		76								

EQUIPMENT OPERATING LOG

DATE: 12/4/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0700	0	Open	Shut	0	.1	.7	AirSup	Shut	Shut	Open
0800	0	Open	Shut	0	Off	.7				
0900	0			0	.3	.7				
1000	0			0	.3	.7				
1100	0			0	.25	.7				
1200	0			0	.25	.7				
1300	0			0	.25	.7				
1400	0			0	.25	.7				
1500	0			0	2.5	.68				
1600	0			0	2.4	2.3				
1700	0			0	2.4	2.2				
1800	0			0						
1900										

TIME	N_2 Pos.	TLBP Pos.	St. Pos.	StBP. B.P.Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	Sta-1	NoFlow			.1
1900										
1000										.3
1100										.3
1200										.25
1300										.25
1400										.25
1500										2.5
1600										2.5
1700										2.4
1800										2.4
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	76°			1500		76			
0900		76			1600		76			
1000		76			1700		76			
1100		76			1800		76			
1200		76			1900					
1300		76								
1400		76								

EQUIPMENT OPERATING LOG

DATE: 12/7/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	2.2	N^2 Airs	Shut	Shut	Open
0900					1.4	2.2				
1000					1.4	2.2				
1100					1.4	2.2				
1200					1.4	2.2				
1300					.5	2.6				
1400					.4	2.7				
1500					.3	2.8				
1600					.2	2.9				
1700	▼	▼	▼	▼	1.5	3.0	▼	▼	▼	▼
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	NO_2 %	N_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	51A. 1	No Flow	—	—	.1
0900								—	—	1.4
1000								—	—	1.4
1100								—	—	1.4
1200								—	—	1.4
1300								—	—	.5
1400								—	—	.4
1500								—	—	.3
1600								—	—	.2
1700	▼	▼	▼	▼	▼	▼	▼	—	—	1.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	—	75°			1500	—	—			
0900	—	75			1600	—	—			
1000	—	75			1700	—	82°			
1100	—	75			1800					
1200	—	76°			1900					
1300	—	76								
1400	—	76								

EQUIPMENT OPERATING LOG

DATE: 12/8/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut		.1	1.4	Shut	Shut	N^2 Airs	Shut
0900	↓	↓	↓	0	1.1	1.4	↓	↓	↓	↓
1000	↓	↓	↓	↓	1.1	1.4	↓	↓	↓	↓
1100	↓	↓	↓	↓	1.1	1.4	↓	↓	↓	↓
1200	↓	↓	↓	↓	1.1	1.4	↓	↓	↓	↓
1300	↓	↓	↓	↓	1.1	1.4	↓	↓	↓	↓
1400	↓	↓	↓	↓	1.4	2.4	↓	↓	↓	↓
1500	↓	↓	↓	↓	1.4	2.4	↓	↓	↓	↓
1600	↓	↓	↓	↓	1.4	2.4	↓	↓	↓	↓
1700	↓	↓	↓	↓	.8	2.2	↓	↓	↓	↓
1800	↓	↓	↓	↓	.8	2.2	↓	↓	↓	↓
1900	↓	↓	↓	↓	1.6	1.9	↓	↓	↓	↓

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Shut	Shut	Shut	Shut	Off	No				Closed
0900	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1000	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1100	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1200	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1300	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1400	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1500	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1600	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1700	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1800	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1900	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	----	70°			1500	--	70°			
0900	-	75			1600		75			
1000		75			1700		75			
1100		75			1800		75			
1200		75			1900	--	75			
1300	----	75								
1400										

EQUIPMENT OPERATING LOG

DATE: 12/9/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos
0800	0	Open	Off	0	.1	1.25	N^2 Airs	Closed	Closed	On
0900					1.1	1.25				
1000					1.1	1.25				
1100					1.1	1.5				
1200					1.1	1.8				
1300					1.1	1.8				
1400					.5	1.8				
1500					.5	1.8				
1600					.5	1.8				
1700					.4	1.8				
1800	↓	↓	↓	↓	1.5	1.8	↓	↓	↓	↓
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	On	Off	Off	Off	Off	ST-1	No Flow			.1
1900										1.1
1000										1.1
1100										1.1
1200										1.1
1300										1.1
1400										.5
1500										.5
1600										.5
1700										.4
1800	↓	↓	↓	↓	↓	↓	↓			1.5
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800		74			1500		75			
0900		74			1600		76			
1000		74			1700		76			
1100		75			1800		76			
1200		75			1900					
1300		75								
1400										

EQUIPMENT OPERATING LOG

DATE: 12/10/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sol. V Positn.	Return Valve Pos.	Supply Valve Pos.	Filter C.O. Pos.
0700	0	Closed	Open	0	.7	.7	Closed	Closed	Closed	Closed
0800					.7	.7				
0900					.7	.7				
1000					.7	.7				
1100					.6	.6				
1200					.7	.7				
1300					.7	.7				
1400					.7	.7				
1500					.7	.7				
1600					1.	1.0				
1700					1.	1.0				
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	St. F. B.P. Pos.	Pump	On Serv.	M.S.A.	TVO	H2O	Int. L.P.
0800	Closed	Closed	Closed	Closed	Off	STA-2	No Flow			.7
1900										.7
1000										.7
1100										.7
1200										.7
1300										.7
1400										.9
1500										.5
1600										.4
1700										1.7
1800										1.7
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.7	75°			1500	.5	75°			
0900	.7	75			1600	.5	75			
1000	.7	75			1700	1.7	75			
1100	.7	75			1800	1.7	75			
1200	.6	75			1900					
1300	.6	75								
1400	.5									

EQUIPMENT OPERATING LOG

DATE: 12/11/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Open	0	.3	.9	Shut	Shut	Shut	Shut
0900					.3	.9				
1000					.3	.9				
1100					.3	.9				
1200					.25	1.0				
1300					.25	1.0				
1400					.25	1.0				
1500					.25	1.0				
1600					.25	1.0				
1700	↓	↓	↓	↓	2.0	2.0	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Str. B.P. Pos.	Pump	On Serv.	M.S.A.	STC %	H_2O %	Int. L.P.
0800	Shut	Shut	Shut	Shut	Off	STA-2	No Flow	—	—	.3
0900								—	—	.3
1000								—	—	.3
1100								—	—	.3
1200								—	—	.25
1300								—	—	.25
1400								—	—	.25
1500								—	—	.25
1600								—	—	.25
1700	↓	↓	↓	↓	↓	↓	↓	—	—	2.0
1800								—	—	
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.3	74°			1500	.25	76			
0900	.3	74°			1600	.25	76			
1000	.3	74			1700	2.0	76			
1100	.3	75			1800					
1200	.25	75			1900					
1300	.25	75								
1400	.25	75								

EQUIPMENT OPERATING LOG

DATE: 12/14/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Open	0	.1	.6	N^2 Airs	Shut	Shut	Open
0900	↓	↓	↓	↓	.8	.6	N^2 Sup	↓	↓	↓
1000	↓	↓	↓	↓	.6	1.5	↓	↓	↓	↓
1100	↓	↓	↓	↓	.6	1.5	↓	↓	↓	↓
1200	↓	↓	↓	↓	.6	1.5	↓	↓	↓	↓
1300	↓	↓	↓	↓	.6	1.5	↓	↓	↓	↓
1400	↓	↓	↓	↓	.6	1.5	↓	↓	↓	↓
1500										
1600										
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-2	No Flow			.1
0900	↓	↓	↓	↓	↓	↓	↓			.8
1000	↓	↓	↓	↓	↓	↓	↓			.6
1100	↓	↓	↓	↓	↓	↓	↓			.6
1200	↓	↓	↓	↓	↓	↓	↓			.6
1300	↓	↓	↓	↓	↓	↓	↓			.6
1400	↓	↓	↓	↓	↓	↓	↓			.6
1500										
1600										
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800		72			1500					
0900	.8	72			1600					
1000	.6	72			1700					
1100	.6	73			1800					
1200	.6	73			1900					
1300	.6	74								
1400	.6	74								

EQUIPMENT OPERATING LOG

DATE: 12/15/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Open	0	.1	.2	ETO Supply Closed		Closed	Open
0900					.5	.6				
1000					.5	.6				
1100					.4	.5				
1200					.4	.5				
1300					.3	.4				
1400					.3	.4				
1500					.3	.3				
1600					.2	.2				
1700	↓	↓	↓	↓	1.6	1.6	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	TLBP Pos.	St. Pos.	Str. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	None	No Flow			.1
1900										.5
1000										.5
1100										.4
1200										.4
1300										.3
1400										.3
1500										.3
1600	↓	↓	↓	↓	↓	↓	↓			1.2
1700										1.6
1800										
1900										

TIME	Int. L.P.	M.B. Temp				Int. L.P.	M.B. Temp.			
0800	.1	74°			1500	.3	75°			
0900	.5	74			1600	.2	75			
1000	.5	74			1700	1.6	75			
1100	.4	74			1800					
1200	.4	75			1900					
1300	.3	75								
1400	.3	75								

EQUIPMENT OPERATING LOG

DATE: 12-16-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800		[illegible]	[illegible]		.1	0.1	[illegible]-S	8[illegible]	S[illegible]	C
0900	↓	↓	↓	↓	1.5	1.5	↓	↓	↓	↓
1000					1.1	1.1				
1100					1.1	1.1				
1200					1.2	1.2				
1300					1.2	1.2				
1400					1.0	1.0				
1500					.8	0.8				
1600					.5	0.5				
1700	↓	↓	↓	↓	2.0	2.0	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Str. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-2	No flow	-	-	0.1
0900	↓	↓	↓	↓	↓	↓	↓	↓	↓	1.5
1000										1.1
1100										1.1
1200										1.2
1300										1.2
1400										1.0
1500										0.8
1600									↓	0.5
1700	↓	↓	↓	↓	↓	↓	↓	↓		2.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	0.1	74°			1500	0.8	74°			
0900	1.5	↓			1600	0.5				
1000	1.1				1700	2.0				
1100	1.1				1800					
1200	1.2				1900					
1300	1.2									
1400	1.0	↓								

EQUIPMENT OPERATING LOG

DATE: 12-17-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800					0.1	0.1	N Air		ut	O
0900					1.5	1.5				
1000					1.5	1.5				
1100					1.5	1.5				
1200					2.0	2.0				
1300					2.0	2.0				
1400					2.0	2.0				
1500					2.0	2.0				
1600	↓	↓	↓	↓	2.0	2.0	↓	↓	↓	↓
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stgr. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Ope	S		C	of	S	W			0.1
1900										1.5
1000										1.5
1100										1.5
1200										2.0
1300										2.0
1400										2.0
1500						↓	↓	↓	↓	2.0
1600	↓	↓	↓	↓	↓			Read		2.0
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	0.1	74°			1500	2"	74			
0900	1.5				1600	2"	74			
1000	1.5				1700					
1100	1.5				1800					
1200	2"				1900					
1300	2"									
1400	2"	↓								

EQUIPMENT OPERATING LOG

DATE: 12-18-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Open	0	0.2	0.2	NO Air	Closed	Closed	Open
0900					2.0	3.0				
1000					2.0	3.0				
1100					2.0	3.0				
1200					1.8	3.0				
1300					1.8	3.0				
1400					1.7	2.9				
1500					1.6	2.9				
1600					1.6	2.9	ET ->			
1700					1.5	2.9	N2Air			
1800					1.5	2.9	"			
1900	↓	↓	↓	↓				↓	↓	↓

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Closed	Closed	Closed	Off	STA-2	No Flow	--	--	0.2
1000										2.0
1100										2.0
1200										1.8
1300										1.8
1400										1.7
1500										1.6
1600										1.6
1700										1.5
1800										1.5
1900	↓	↓	↓	↓	↓	↓	↓	↓	↓	

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	—	75			1500	--	75			
0900					1600					
1000					1700	↓	↓			
1100					1800					
1200		↓			1900					
1300		75								
1400	↓	75								

EQUIPMENT OPERATING LOG

DATE: 12-21-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	C	O	On		0.1	0.4	N2A	Clo	C sed	O n
0900					1.5	0.4				
1000					1.5	0.5				
1100					1.5	0.7				
1200					1.5	0.8				
1300					1.4	0.8				
1400					1.3	0.8				
1500					1.2	0.8				
1600					1.1	0.9	A			
1700										
1800										
1900	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	n	clo d	clo d	clos			o	CALI ATIN		0.1
1900										1.5
1000										1.5
1100										1.5
1200										1.5
1300										1.4
1400										1.3
1500	↓	↓	↓	↓	↓	↓	↓	↓	↓	1.2
1600	en		S	S				Cal brat		1.1
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	---				1500	---	74.5			
0900					1600	---	74.5			
1000					1700					
1100					1800					
1200					1900					
1300										
1400	↓	↓								

EQUIPMENT OPERATING LOG

DATE: 12-22-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	[illegible]	Open	Open	0	0.1	0.5	N2A	Shut	Shut	Open
0900					2.8	0.5				
1000					2.8	0.5				
1100					2.8	0.5				
1200					1.0	0.5				
1300					1.5	0.5				
1400					1.2	0.6				
1500					1.2	0.7				
1600					1.2	0.8				
1700	↓	↓	↓	↓	1.2	0.8	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO ?	H_2O ?	Ent. L.P.
0800	Open	Shut	Shut	Open		[illegible]	[illegible]			0.1
1900										2.8
1000										2.8
1100										2.8
1200										1.0
1300										1.5
1400										1.2
1500										1.2
1600										1.2
1700	↓	↓	↓	↓	↓	↓	↓	↓	↓	1.2
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.				
0800	—	74			1500		74				
0900					1600		74				
1000					1700		74				
1100					1800						
1200					1900	↓					
1300											
1400	↓	↓									

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	[illegible]	[illegible]	[illegible]		0.1	0.4	[illegible]	Closed	Closed	Open
0900	↓	↓	↓	↓	1.0	0.4	↓	↓	↓	↓
1000					0.8	0.4				
1100					0.6	0.4				
1200					0.5	0.4				
1300					0.4	0.4				
1400					0.3	0.4				
1500					0.3	0.8				
1600					0.3	0.8				
1700					1.0	0.8				
1800					↓	↓				
1900	↓	↓	↓	↓			↓	↓	↓	↓

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	closed	closed	closed	off	None	on	[illegible]	Out of Service	.1
1900							No Flow			1.0
1000	↓	↓	↓	↓	↓	↓	↓	↓	↓	.8
1100										.6
1200										.5
1300										.4
1400										.3
1500	Op	Sh	Sh	Sh	O			---	%	.3
1600	"	"	"	"	"			---	---	.3
1700	"	"	"	"	"			---	---	1.0
1800										
1900	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

TIME	Int. L.P.	M.B. Temp				Int. L.P.	M.B. Temp.			
0800	---	74°			1500	---	76°			
0900		74°			1600	---	76°			
1000		74°			1700	---	76°			
1100		75°			1800					
1200		75°			1900					
1300		75°								
1400		75°								

EQUIPMENT OPERATING LOG

DATE: 12-28-64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Open	0	0.1	0.3	N2Air	closed	closed	on
0900	↓	↓	↓	↓	0.4	0.3	↓	↓	↓	↓
1000					1.0	0.4				
1100					0.6	0.6				
1200					0.2	0.6				
1300					1.0	0.6				
1400					0.5	0.5				
1500					1.0	0.5				
1600	↓	↓	↓	↓	2.0	0.5	↓	↓	↓	↓
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R.H. H_2O %	Ent. L.P.
0800	On	Off	Off	Off	Off	Off	No flow	---	38%	0.1
1900	↓	↓	↓	↓	↓	↓	↓	—		0.4
1000										1.0
1100										0.6
1200										0.2
1300										1.0
1400										0.5
1500										1.0
1600	↓	↓	↓	↓	↓	↓	↓	↓		2.0
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	---	72°			1500		76			
0900	↓	75°			1600		75			
1000		78°			1700					
1100		87°			1800					
1200		82°			1900					
1300		79°								
1400	↓	77°								

EQUIPMENT OPERATING LOG

DATE: 12/29/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	OPEN	0	.1	.1	N AIR-S	SHUT	SHUT	OPEN
0900	"	"	"	"	1.5	1.0	"	"	"	"
1000	"	"	"	0	1.2	1.0	"	"	"	"
1100	"	"	"	0	1.0	1.0	"	"	"	"
1200	0	"	"	0	.8	1.4	"	"	"	"
1300	0	OPEN	OPEN	0	.7	1.4	"	SHUT	SHUT	OPEN
1400	0	"	"	0	.6	1.4	"	"	"	"
1500	0	"	"	0	.5	1.4	"	"	"	"
1600	0	"	"	0	1.0	1.2	"	"	"	"
1700	0	"	"	0	1.0	1.2	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. H_2O %	Ent. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	NONE	NO FLOW	-	31%	.1
1900	"	"	"	"	"	"	"	-	-	1.5
1000	"	"	"	"	"	"	"	-	-	1.2
1100	"	"	"	"	"	"	"	-	-	1.0
1200	"	"	"	"	"	"	"	-	35%	.8
1300	OPEN	SHUT	SHUT	SHUT	OFF	NONE	NO FLOW	-	-	.7
1400	"	"	"	"	"	"	"	-	-	.5
1500	"	"	"	"	"	"	"	-	-	1.0
1600	"	"	"	"	"	"	"	-	-	1.0
1700	"	"	"	"	"	"	"	-	-	1.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int.	M.B.Temp.			
0800	-	73°			1500		75°			
0900	-	73°			1600		75°			
1000	-	74°			1700		75°			
1100	-	74°			1800					
1200	-	75°			1900					
1300	-	75°								
1400	-	75°								

EQUIPMENT OPERATING LOG

DATE: 12/30/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0700	0	OPEN	OPEN	0	.1	.7	N_2 AIR	CLOSED	CLOSED	OPEN
0800	20	"	"	0	1.0	1.0	"	"	"	"
0900	15	"	"	0	.9	1.0	"	"	"	"
1000	11	"	"	0	.9	1.0	"	"	"	"
1100	10	"	"	0	.8	1.0	"	"	"	"
1200	8	"	"	0	.8	1.0	"	"	"	"
1300	5	"	"	0	.6	1.0	"	"	"	"
1400	4	"	"	0	.7	1.0	"	"	"	"
1500	2	"	"	0	.5	1.0	"	"	"	"
1600	1	"	"	0	2.0	1.0	"	"	"	"
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. H2O %	Ent. L.P.
0800	OPEN	CLOSED	CLOSED	CLOSED	OFF	NONE	NO FLOW	-	32%	.1
0900	"	"	"	"	"	"	"	-	-	1.0
1000	"	"	"	"	"	"	"	-	-	.9
1100	"	"	"	"	"	"	"	-	-	.9
1200	"	"	"	"	"	"	"	-	-	.8
1300	"	"	"	"	"	"	"	-	-	.8
1400	"	"	"	"	"	"	"	-	-	.6
1500	"	"	"	"	"	"	"	-	-	.7
1600	"	"	"	"	"	"	"	-	-	.5
1700	"	"	"	"	"	"	"	-	-	2.0
1800										
1900										

TIME	Int. L.P.	M.B. Temp.				Int. L.P.	M.B. Temp.			
0800	-	75°			1500	-	75°			
0900	-	75°			1600	-	75°			
1000	-	75°			1700	-	75°			
1100	-	75°			1800					
1200	-	75°			1900					
1300	-	75°								
1400	-	75°								

EQUIPMENT OPERATING LOG

DATE: 12/31/64

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	OPEN	0	.1	.5	CLOSED	CLOSED	CLOSED	CLOSED
0900	0	"	"	0	2.0	.5	"	"	"	"
1000	0	"	"	0	1.9	.5	"	"	"	"
1100	0	"	"	0	1.5	.5	"	"	"	"
1200	0	"	"	0	1.1	.6	"	"	"	"
1300	0	"	"	0	2.0	.6	"	"	"	"
1400	0	SHUT	SHUT	0	1.5	6	"	"	"	"
1500	0	SHUT	SHUT	0	1.0	.6	"	"	"	"
1600	13	"	SHUT	0	.8	2.8	"	"	"	"
1700	13	SHUT	SHUT	0	1.5	2.7	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Ster. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	OPEN	OPEN	CLOSED	CLOSED	OFF	STA-1	NO FLOW	NO FLOW	-	.1
0900	"	"	"	"	"	"	"	"	-	2.0
1000	"	"	"	"	"	"	"	"	-	1.9
1100	"	"	"	"	"	"	"	"	-	1.5
1200	"	"	"	"	"	"	"	"	-	1.1
1300	"	"	"	"	"	"	"	"	-	2.0
1400	"	"	"	"	"	"	"	"	-	1.5
1500	"	"	"	"	"	"	"	"	-	1.0
1600	"	"	"	"	"	"	"	"	-	.8
1700	"	"	"	"	"	"	"	"	-	1.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	.1	75°			1500	1.0	75			
0900	2.0	75°			1600	.8	75			
1000	1.9	75°			1700	1.5	75			
1100	1.5	75°			1800					
1200	1.1	75°			1900					
1300	2.0	75°								
1400	1.5	75°								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	CLOSED	CLOSED	0	.2	.9	N_2 AIR	CLOSED	CLOSED	CLOSED
0900	0	CLOSED	OPEN	0	.8	1.5	"	CLOSED	CLOSED	OPEN
1000	0	"	"	0	.7	1.5	"	"	"	"
1100	0	"	"	0	.7	1.5	"	"	"	"
1200	0	"	"	0	.6	1.5	"	"	"	"
1300	0	"	"	0	.5	1.6	"	"	"	"
1400	0	"	"	0	.4	1.7	"	"	"	"
1500	0	"	"	0	1.0	1.7	"	"	"	"
1600	0	"	"	0	.8	1.8	"	"	"	"
1700	0	"	"	0	2.0	1.9	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	CLOSED	CLOSED	CLOSED	CLOSED	OFF	NONE	NO FLOW	-	-	.2
1900	OPEN	CLOSED	CLOSED	CLOSED	OFF	"	"	-	-	.8
1000	"	"	"	"	"	"	"	-	-	.7
1100	"	"	"	"	"	"	"	-	-	.7
1200	"	"	"	"	"	"	"	-	-	.6
1300	"	"	"	"	"	"	"	-	-	.5
1400	"	"	"	"	"	"	"	-	-	.4
1500	"	"	"	"	"	"	"	-	-	1.0
1600	"	"	"	"	"	"	"	-	-	.8
1700	"	"	"	"	"	"	"	-	-	2.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	75°			
0900	-	74°			1600	-	75°			
1000	-	74°			1700	-	76°			
1100	-	75°			1800					
1200	-	75°			1900					
1300	-	75°								
1400	-	75°								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	SHUT	0	.1	1.6	N_2 AIR S	SHUT	SHUT	OPEN
0900	"	"	"	0	1.0	1.6	"	"	"	"
1000	"	"	"	0	.9	1.6	"	"	"	"
1100	"	"	"	0	.7	1.6	"	"	"	"
1200	"	"	"	0	.5	1.6	"	"	"	"
1300	"	"	"	0	.4	1.6	"	"	"	"
1400	"	"	"	0	.2	1.6	"	"	"	"
1500	"	"	"	0	.4	1.5	"	"	"	"
1600	"	"	"	0	.4	1.5	"	"	"	"
1700	"	"	"	0	1.4	1.5	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Str. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. XXXX%	Int. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	STA 1	NO FLOW	-	-	.1
1900	"	"	"	"	"	"	"	-	35%	1.0
1000	"	"	"	"	"	"	"	-	-	.9
1100	"	"	"	"	"	"	"	-	-	.7
1200	"	"	"	"	"	"	"	-	-	.5
1300	"	"	"	"	"	"	"	-	-	.4
1400	"	"	"	"	"	"	"	-	-	.2
1500	"	"	"	"	"	"	"	-	-	.4
1600	"	"	"	"	"	"	"	-	-	.4
1700	"	"	"	"	"	"	"	-	-	1.4
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75°			1500	-	75°			
0900	-	75°			1600	-	76°			
1000	-	75°			1700	-	76°			
1100	-	75°			1800					
1200	-	75°			1900					
1300	-	75°								
1400	-	75°								

EQUIPMENT OPERATING LOG

DATE: 1/6/65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	CLOSED	0	.1	.8	N_2 AIR	CLOSED	CLOSED	OPEN
0900	"	"	"	0	1.0	.8	"	"	"	"
1000	"	"	"	0	.8	.8	"	"	"	"
1100	"	"	"	0	.7	.8	"	"	"	"
1200	"	"	"	0	.6	.8	"	"	"	"
1300	0	"	"	0	.5	1.4	"	"	"	"
1400	"	"	"	0	.4	1.4	"	"	"	"
1500	"	"	"	0	.4	1.5	"	"	"	"
1600	"	"	"	0	.3	1.5	"	"	"	"
1700	"	"	"	0	.2	1.5	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	MTO %	R. H. ~~X2000~~	Int. L.P.
0800	OPEN	CLOSED	CLOSED	CLOSED	OFF	OFF	NO FLOW	-	-	.1
1900	"	"	"	"	"	"	"	-	35%	1.0
1000	"	"	"	"	"	"	"	-	-	.8
1100	"	"	"	"	"	"	"	-	-	.7
1200	"	"	"	"	"	"	"	-	-	.6
1300	"	"	"	"	"	"	"	-	36%	.5
1400	"	"	"	"	"	"	"	-	-	.4
1500	"	"	"	"	"	"	"	-	-	.4
1600	"	"	"	"	"	"	"	-	-	.3
1700	"	"	"	"	"	"	"	-	-	.2
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	76°			
0900	-	74°			1600	-	76°			
1000	-	74°			1700	-	76°			
1100	-	74°			1800					
1200	-	74°			1900					
1300	-	76°								
1400	-	76°								

EQUIPMENT OPERATING LOG

DATE: 1/7/65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	SHUT	0	.1	.2	N_2 AIR	SHUT	SHUT	OPEN
0900	10.0	OPEN	SHUT	0	2.6	1.6	N_2 AIR	OPEN	SHUT	OPEN
1000	2.0	"	"	"	2.0	1.6	"	SHUT	"	"
1100	0	"	"	"	3.0	1.5	"	"	"	"
1200	"	"	"	"	1.6	1.5	"	"	"	"
1300	"	"	"	"	2.0	1.5	"	"	"	"
1400	"	"	"	"	1.0	1.5	"	"	"	"
1500	"	"	"	"	.8	1.5	"	"	"	"
1600	"	"	"	"	.7	1.4	"	"	"	"
1700	"	"	"	"	2.1	1.3	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. [illegible] %	Ent. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	STA 1	NO FLOW	-	-	.1
1900	OPEN	SHUT	SHUT	SHUT	ON	STA 1	ON	20%	38%	2.0
1000	"	"	"	"	OFF	"	NO FLOW	"	"	2.0
1100	"	"	"	"	"	"	"	"	"	3.0
1200	"	"	"	"	"	"	"	"	"	1.6
1300	"	"	"	"	"	"	"	"	"	2.0
1400	"	"	"	"	"	"	"	"	"	1.0
1500	"	"	"	"	"	"	"	"	"	.8
1600	"	"	"	"	"	"	"	"	"	.7
1700	"	"	"	"	"	"	"	"	"	2.1
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	75°			
0900	-	74°			1600	-	75°			
1000	-	74°			1700	-	75°			
1100	-	75°			1800					
1200	-	75°			1900					
1300	-	75°								
1400	-	75°								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	SHUT	0	.1	.3	N_2 AIR	SHUT	SHUT	OPEN
0900	"	"	"	"	1.1	.4	"	"	"	"
1000	"	"	"	"	.9	.5	"	"	"	"
1100	"	"	"	"	1.5	.6	"	"	"	"
1200	"	"	"	"	1.4	.7	"	"	"	"
1300	"	"	"	"	1.3	.8	"	"	"	"
1400	"	"	"	"	2.4	.8	"	"	"	"
1500	"	"	"	"	2.0	.8	"	"	"	"
1600	"	"	"	"	2.2	.8	"	"	"	"
1700	"	"	"	"	2.0	.8	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. H_2O_2 %	Ent. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	STA 1	NO FLOW	-	-	.1
1900	"	"	"	"	"	"	"	-	-	1.1
1000	"	"	"	"	"	"	"	-	-	.9
1100	"	"	"	"	"	"	"	-	-	1.5
1200	"	"	"	"	"	"	"	-	-	1.4
1300	"	"	"	"	"	"	"	-	-	1.3
1400	"	"	"	"	"	"	"	-	-	2.4
1500	"	"	"	"	"	"	"	-	-	2.0
1600	"	"	"	"	"	"	"	-	-	2.2
1700	"	"	"	"	"	"	"	-	-	2.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	75°			
0900	-	74°			1600	-	75°			
1000	-	74°			1700	-	75°			
1100	-	74°			1800					
1200	-	74°			1900					
1300	-	74°								
1400	-	75°								

EQUIPMENT OPERATING LOG

DATE: 1/11/65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	CLOSED	0	.1	.8	N_2 AIR	CLOSED	CLOSED	OPEN
0900	"	"	"	"	1.1	.8	"	"	"	"
1000	"	"	"	"	1.0	.8	"	"	"	"
1100	"	"	"	"	1.0	.8	"	"	"	"
1200	"	"	"	"	.8	.8	"	"	"	"
1300	"	"	"	"	.7	.7	"	"	"	"
1400	"	"	"	"	.5	.7	"	"	"	"
1[illegible]00	"	"	"	"	.4	.7	"	"	"	"
1[illegible]00	"	"	"	"	.3	.6	"	"	"	"
[illegible]	"	"	"	"	1.6	.5	"	"	"	"
[illegible]										
[illegible]										
[illegible]										
[illegible]										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H.R. [illegible]	Ent. L.P.
[illegible]2	OPEN	CLOSED	CLOSED	CLOSED	OFF	STA 1	NO FLOW	-	-	.1
1000	"	"	"	"	"	"	"	-	30%	1.1
1000	"	"	"	"	"	"	"	-	-	1.0
1100	"	"	"	"	"	"	"	-	-	1.0
1200	"	"	"	"	"	"	"	-	-	.8
1300	"	"	"	"	"	"	"	-	35%	.7
1400	"	"	"	"	"	"	"	-	-	.5
1500	"	"	"	"	"	"	"	-	-	.4
1600	"	"	"	"	"	"	"	-	-	.3
1700	"	"	"	"	"	"	"	-	-	1.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	73°			1500	-	76°			
0900	-	74°			1600	-	76°			
1000	-	74°			1700	-	76°			
1100	-	74°			1800					
1200	-	74°			1900					
1300	-	75°								
1400	-	75°								

EQUIPMENT OPERATING LOG

DATE: 1/12/65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	SHUT	0	1	.4	N_2 AIR	SHUT	SHUT	OPEN
0900	"	"	"	"	.8	.4	"	"	"	"
1000	"	"	"	"	.7	.4	"	"	"	"
1100	"	"	"	"	.6	.5	"	"	"	"
1200	"	"	"	"	.5	.5	"	"	"	"
1300	"	"	"	"	.4	.5	"	"	"	"
1400	"	"	"	"	.3	.5	"	"	"	"
1500	"	"	"	"	.6	.8	"	"	"	"
1600	"	"	"	"	.5	.7	"	"	"	"
1700	"	"	"	"	2.5	.7	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	TLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R, H. H_2O %	Int. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	STA 1	NO FLOW	-	-	.1
0900	"	"	"	"	"	"	"	-	-	.8
1000	"	"	"	"	"	"	"	-	-	.7
1100	"	"	"	"	"	"	"	-	-	.6
1200	"	"	"	"	"	"	"	-	-	.5
1300	"	"	"	"	"	"	"	-	-	.4
1400	"	"	"	"	"	"	"	-	-	.3
1500	"	"	"	"	"	"	"	-	-	.6
1600	"	"	"	"	"	"	"	-	-	.5
1700	"	"	"	"	"	"	"	-	-	2.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	75°			1500	-	76°			
0900	-	75°			1600	-	76°			
1000	-	76°			1700	-	76°			
1100	-	76°			1800					
1200	-	75°			1900					
1300	-	76°								
1400	-	76°								

EQUIPMENT OPERATING LOG

DATE: 1/13/65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	SHUT	0	1	2	N_2 AIR	SHUT	SHUT	OPEN
0900	"	"	"	"	2.0	.3	"	"	"	"
1000	"	"	"	"	.2	.3	"	"	"	"
1100	"	"	"	"	2.0	.	"	"	"	"
1200	"	"	"	"	.7	.4	"	"	"	"
1300	"	"	"	"	.3	.4	"	"	"	"
1400	"	"	"	"	.2	.5	"	"	"	"
1500	"	"	"	"	.2	.5	"	"	"	"
1600	"	"	"	"	.2	.4	"	"	"	"
1700	"	"	"	"	2.2	.4	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stgr. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. H_2O % XXXXX	Ent. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	STA 1	NO FLOW	-	-	.1
1900	"	"	"	"	"	"	"	-	-	2.0
1000	"	"	"	"	"	"	"	-	-	.2
1100	"	"	"	"	"	"	"	-	-	.2
1200	"	"	"	"	"	"	"	-	-	.7
1300	"	"	"	"	"	"	"	-	-	.3
1400	"	"	"	"	"	"	"	-	29%	.2
1500	"	"	"	"	"	"	"	-	-	.2
1600	"	"	"	"	"	"	"	-	-	.2
1700	"	"	"	"	"	"	"	-	-	2.2
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	77°			
0900	-	75°			1600	-	75°			
1000	-	85°			1700	-	74°			
1100	-	90°			1800					
1200	-	85°			1900					
1300	-	8								
1400	-	79°								

EQUIPMENT OPERATING LOG

DATE: 1/14/65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	OPEN	SHUT	0	.1	.2	H_2 AIR	SHUT	SHUT	OPEN
0900	"	"	"	"	1.0	.2	"	"	"	"
1000	"	"	"	"	.9	.5	"	"	"	"
1100	"	"	"	"	.9	.4	"	"	"	"
1200	"	"	"	"	.8	.4	"	"	"	"
1300	"	"	"	"	.7	.3	"	"	"	"
1400	"	"	"	"	.6		"	"	"	"
1500	"	"	"	"	.4	3.3	"	"	"	"
1600	"	"	"	"	.3		"	"	"	"
1700	"	"	"	"	.8	3.3	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stgr. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	R. H. XXXXX	Ent. L.P.
0800	OPEN	SHUT	SHUT	SHUT	OFF	STA 1	NO FLOW	-	-	.1
1000	"	"	"	"	"	"	"	-	-	1.0
1000	"	"	"	"	"	"	"	-	-	.9
1100	"	"	"	"	"	"	"	-	-	.9
1200	"	"	"	"	"	"	"	-	-	.8
1300	"	"	"	"	"	"	"	-	-	.7
1400	"	"	"	"	"	"	"	-	35%	.6
1500	"	"	"	"	"	"	"	-	-	.4
1600	"	"	"	"	"	"	"	-	-	.3
1700	"	"	"	"	"	"	"	-	-	.8
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	77°			
0900	-	74°			1600	-	78°			
1000	-	74°			1700	-	80°			
1100	-	74°			1800					
1200	-	74°			1900					
1300	-	74°								
1400	-	74°								

EQUIPMENT OPERATING LOG

DATE: 1-15-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Closed	0	.1	.4	N2Air	Closed	Closed	Closed
0900	↓	↓	↓	↓	.8	1.4	↓	↓	↓	↓
1000					.7	1.6				
1100	↓	↓	↓		.6	1.5				↓
1200	12	Open	Shut		.5	1.5				Open
1300	1				.4	1.5				
1400	0				.3	1.4				
1500	↓				.3	1.4				
1600					.2	1.4				
1700	↓	↓	↓	↓	2.0	1.4	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Ster. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Closed	Closed	Closed	Closed	Off	None	No Flow	–	–	.1
1900	↓	↓	↓	↓	↓	↓	↓	–	–	.8
1000								–	–	.7
1100	↓					↓		–	–	.6
1200	Open					STA-1		–	40%	.5
1300						None		–	–	.4
1400								–	–	.3
1500								–	–	.3
1600								–	–	.2
1700	↓	↓	↓	↓	↓	↓	↓	–	–	2.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	–	73°			1500	–	76°			
0900	–	74			1600	–	76			
1000	–	74			1700	–	76			
1100	–	75			1800					
1200	–	76			1900					
1300	–	76								
1400	–	76								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.3	N2 Air	Shut	Shut	Open
0900	↓	↓	↓	↓	1.5	.3	↓	↓	↓	↓
1000	↓	↓	↓	↓	1.4	1.4	↓	↓	↓	↓
1100	↓	↓	↓	↓	1.3	1.3	↓	↓	↓	↓
1200	↓	↓	↓	↓	1.3	1.3	↓	↓	↓	↓
1300	↓	↓	↓	↓	1.2	1.3	↓	↓	↓	↓
1400	↓	↓	↓	↓	1.1	1.1	↓	↓	↓	↓
1500	↓	↓	↓	↓	1.0	1.0	↓	↓	↓	↓
1600	↓	↓	↓	↓	.8	.8	↓	↓	↓	↓
1700	↓	Shut	Shut	0	1.8	1.8	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-1	No Flow	—	35%	.1
1000	↓	↓	↓	↓	↓	STA-1	↓	—	—	1.5
1000	↓	↓	↓	↓	↓	None	↓	—	—	1.4
1100	↓	↓	↓	↓	↓	↓	↓	—	—	1.3
1200	↓	↓	↓	↓	↓	↓	↓	—	—	1.3
1300	↓	↓	↓	↓	↓	↓	↓	—	—	1.2
1400	↓	↓	↓	↓	↓	↓	↓	—	—	1.1
1500	↓	↓	↓	↓	↓	↓	↓	—	—	1.0
1600	↓	↓	↓	↓	↓	↓	↓	—	—	.8
1700	↓	↓	↓	↓	↓	↓	↓	—	35%	1.8
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	—	74°			1500	1.0	75			
0900	—	74			1600	.8	75			
1000	1.4	74			1700	1.8	75			
1100	1.3	74			1800					
1200	1.3	74			1900					
1300	1.2	74								
1400	1.1	74								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	closed	closed	0	.1	.2	N2Air Sup	Closed	Closed	Open
0900	↓	↓	↓	↓	1.0	1.0	↓	↓	↓	↓
1000	↓	↓	↓	↓	.8	.8	↓	↓	↓	↓
1100	↓	↓	↓	↓	.8	.8	↓	↓	↓	↓
1200	↓	↓	↓	↓	.7	.7	↓	↓	↓	↓
1300	↓	↓	↓	↓	.6	.6	↓	↓	↓	↓
1400	↓	↓	↓	↓	.5	.5	↓	↓	↓	↓
1500	↓	↓	↓	↓	.4	.4	↓	↓	↓	↓
1600	↓	↓	↓	↓	.3	.3	↓	↓	↓	↓
1700	↓	↓	↓	↓	1.5	1.5	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stgr. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	On	Shut	Shut	Shut	Off	None	NoFlow	—	—	.1
0900	↓	↓	↓	↓	↓	↓	↓	—	—	1.0
1000	↓	↓	↓	↓	↓	↓	↓	—	—	.8
1100	↓	↓	↓	↓	↓	↓	↓	—	—	.8
1200	↓	↓	↓	↓	↓	↓	↓	—	—	.7
1300	↓	↓	↓	↓	↓	↓	↓	—	—	.6
1400	↓	↓	↓	↓	↓	↓	↓	—	—	.5
1500	↓	↓	↓	↓	↓	↓	↓	—	—	.4
1600	↓	↓	↓	↓	↓	↓	↓	—	—	.3
1700	↓	↓	↓	↓	↓	↓	↓	—	—	1.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.				
0800	.1	74°			1500	.4	74				
0900	1.0	↓			1600	.3	74				
1000	.8	↓			1700	1.5	74				
1100	.8	↓			1800						
1200	.7	↓			1900						
1300	.6	↓									
1400	.5	↓									

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	Open	Closed	Open	0	.8	.8	N_2 Air	Closed	Closed	Open
0900	↓	↓	↓	↓	.7	.7	↓	↓	↓	↓
1000					.7	.7				
1100					.6	.6				
1200					.5	.5				
1300					2.2	2.2				
1400					2.0	2.0				
1500					1.9	1.9				
1600					1.9	1.9				
1700					1.9	1.9				
1800	↓	↓	↓	↓	2.4	2.4	↓	↓	↓	↓
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Closed	Closed	Closed	Off	Off	On	20	—	.8
1000	↓	↓	↓	↓	↓	↓	↓	—	—	.7
1000								—	—	.7
1100								—	—	.6
1200								—	—	.5
1300								—	—	2.2
1400								—	—	2.0
1500								—	—	1.9
1600								—	—	1.9
1700								—	—	1.9
1800	↓	↓	↓	↓	↓	↓	↓	—	—	2.4
1900										

TIME	Int. L.P.	M.B. Temp				Int. L.P.	M.B. Temp.			
0800	.8	73°			1500	1.9	74°			
0900	.7	73			1600	1.9	↓			
1000	.7	73			1700	1.9				
1100	.6	73			1800	2.4	↓			
1200	.5	74			1900					
1300	2.2	74								
1400	2.0	74								

EQUIPMENT OPERATING LOG

DATE: 1-21-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Open	0	.08	.08	N2Air	Closed	Closed	Open
0900					.5	.5				
1000					.42	.42				
1100					1.5	1.5				
1200					1.4	1.4				
1300					1.0	1.0				
1400					1.0	1.0				
1500					.9	.9				
1600	↓	↓	↓	↓	.8	.8	↓	↓	↓	↓
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Closed	Closed	Closed	Off	None	No Flow	—	—	.08
1900								—	—	.5
1000								—	—	.42
1100								—	—	1.5
1200								—	—	1.4
1300								—	—	1.0
1400								—	—	1.0
1500								—	—	.9
1600	↓	↓	↓	↓	↓	↓	↓	—	—	.8
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	.08	73°			1500	.9	74			
0900	.5	74			1600	.8	74			
1000	.42	74			1700					
1100	1.5	74			1800					
1200	1.4	74			1900					
1300	1.0	74								
1400	1.0	74								

EQUIPMENT OPERATING LOG

DATE: 1-22-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	Closed	Closed	Closed	0	.6	.6	N_2 Air	Closed	Closed	Open
0900	↓	↓	↓	↓	1.0	1.0	↓	↓	↓	↓
1000					.8	.8				
1100					.7	.7				
1200					.6	.6				
1300					.6	.6				
1400					.4	.4				
1500					.3	.3				
1600	↓	↓	↓	↓	.2	.2	↓	↓	↓	↓
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Closed	Closed	Closed	Off	None	NoFlow	—	—	.6
0900	↓	↓	↓	↓	↓	↓	↓	—	38	1.0
1000								—	—	.8
1100								—	—	.7
1200								—	—	.6
1300								—	—	.6
1400								—	—	.4
1500								—	—	.3
1600	↓	↓	↓	↓	↓	↓	↓	—	36	.2
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.6	73°			1500	.3	76			
0900	1.0	73			1600	.2	76			
1000	.8	74			1700					
1100	.7	74			1800					
1200	.6	75			1900					
1300	.6	75								
1400	.4	76								

EQUIPMENT OPERATING LOG

M-56-65-1
Vol. II
DATE: 1-25-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Closed	0	.1	.1	N2 Air	Closed	Closed	Closed
0900	↓	↓	↓	↓	1.0	1.0	↓	↓	↓	↓
1000	↓	↓	↓	↓	.8	.8	↓	↓	↓	↓
1100	↓	↓	↓	↓	.7	.7	↓	↓	↓	↓
1200	↓	↓	↓	↓	.6	.6	↓	↓	↓	↓
1300	↓	↓	↓	↓	.5	.5	↓	↓	↓	↓
1400	↓	↓	↓	↓	.4	.4	↓	↓	↓	↓
1500	↓	↓	↓	↓	.4	.4	↓	↓	↓	↓
1600	↓	↓	↓	↓	.3	.3	↓	↓	↓	↓
1700										
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Closed	Closed	Closed	Closed	Off	None	No Flow	—	31	.1
1900	↓	↓	↓	↓	↓	↓	↓	—	—	1.0
1000	↓	↓	↓	↓	↓	↓	↓	—	—	.8
1100	↓	↓	↓	↓	↓	↓	↓	—	—	.7
1200	↓	↓	↓	↓	↓	↓	↓	—	—	.6
1300	↓	↓	↓	↓	↓	↓	↓	—	—	.5
1400	↓	↓	↓	↓	↓	↓	↓	—	—	.4
1500	↓	↓	↓	↓	↓	↓	↓	—	—	.4
1600	↓	↓	↓	↓	↓	↓	↓	—	35%	.3
1700										
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	73°			1500	.4	76°			
0900	1.0	73			1600	.3	77			
1000	.8	74			1700					
1100	.7	74			1800					
1200	.6	74			1900					
1300	.5	74								
1400	.4	75								

EQUIPMENT OPERATING LOG

DATE: 1-26-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Closed	0	2.2	2.2	N2Air	Closed	Closed	Closed
0900	↓	↓	↓	↓	2.0	2.0	↓	↓	↓	↓
1000					1.8	1.8				
1100					.8	.8				
1200					.5	.5				
1300					2.0	2.0				
1400					1.6	1.6				
1500					.8	.8				
1600					.5	.5				
1700	↓	↓	↓	↓	2.2	2.2	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Closed	Closed	Closed	Closed	Off	None	No Flow	—	38%	2.2
1900	↓	↓	↓	↓	↓	↓	↓	↓	↓	2.0
1000										1.8
1100										.8
1200										.6
1300										2.0
1400										1.6
1500										.8
1600										.5
1700	↓	↓	↓	↓	↓	↓	↓	↓	↓	2.2
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	2.2	73°			1500	.8	75			
0900	2.0	73			1600	.5	77			
1000	1.8	73			1700	2.2	77			
1100	.8	73			1800					
1200	.5	74			1900					
1300	2.0	74								
1400	1.6	74								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.8	.8	N2 Air	Shut	Shut	Shut
0900					.8	.8				
1000					.8	.8				
1100					.8	.8				
1200					.8	.8				
1300					.8	.8				
1400					.7	.7				
1500					.7	.7				
1600					.7	.7				
1700					.6	.6				
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Shut	Shut	Shut	Shut	Off	None	No Flow	–	–	.8
1900										.8
1000										.8
1100										.8
1200										.8
1300										.8
1400										.7
1500										.7
1600										.7
1700					On				35%	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.8	73°			1500	.7	76			
0900	.8	73			1600	.7	77			
1000	.8	74			1700	.6	77			
1100	.8	74			1800					
1200	.8	75			1900					
1300	.8	75								
1400	.7	75								

EQUIPMENT OPERATING LOG

DATE: 1-28-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.1	.1	N_2 Air	Shut	Shut	Shut
0900					1.0	1.0				
1000					.8	.8				
1100					.8	.8				
1200					.7	.7				
1300					.7	.7				
1400					.7	.7				
1500					.6	.6				
1600					.6	.6				
1700	↓	↓	↓	↓	2.5"	2.5"	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Shut	Shut	Shut	Shut	Off	None	No Flow	-	-	.1
1900									38	1.0
1000									-	.8
1100									-	.8
1200									-	.7
1300									-	.7
1400									-	.7
1500									-	.6
1600									36	.6
1700	↓	↓	↓	↓	↓	↓	↓	↓	-	2.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.1	74°			1500	.6	76			
0900	1.0	74			1600	.6	77			
1000	.8	75			1700	2.5	77			
1100	.8	75			1800					
1200	.7	75			1900					
1300	.7	76								
1400	.7	76								

EQUIPMENT OPERATING LOG

M-56-65-1
Vol. II
DATE: 1-29-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Closed	Closed	0	.5	.5	N_2 Air	Closed	Closed	Closed
0900	0	"	"	"	1.0	1.0	"	"	"	"
1000	0	"		"	.8	.8	"	"	"	"
1100	0	"	"	"	.8	.8	"	"	"	"
1200	0	"	"	"	.8	.8	"	"	"	"
1300	0	"	"	"	.8	.8	"	"	"	"
1400	12	"	Open	32	.8	3.0	"	$\frac{1}{4}$ turn	Open	Open
1500	8	"	Shut	0	.7	2.5	"	Shut	Shut	Shut
1600	0	"	"	"	.6	2.0	"	"	"	"
1700	0	"	"	"	1.1	1.2	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Str. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Int. L.P.
0800	Closed	Closed	Closed	Closed	Off	None	No Flow	-	40%	.5
1000	"	"	"	"	"	"	"	-	-	1.0
1000	"	"	"	"	"	"	"	-	-	.8
1100	"	"	"	"	"	"	"	-	-	.8
1200	"	"	"	"	"	"	"	-	-	.8
1300	"	"	"	"	"	"	"	-	-	.8
1400	Open	Shut	Shut	Shut	Run	STa-2	"	-	-	.8
1500	Shut	"	"	"	Off	none	"	-	-	.7
1600	"	"	"	"	"	"	"	-	-	.6
1700	"	"	"	"	"	"	"	-	-	1.1
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	.5	74°			1500	-	76			
0900	1.0	74			1600	-	76			
1000	.8	75			1700	-	76			
1100	.8	75			1800					
1200	.8	75			1900					
1300	.7	76								
1400	-*	76								

*Isolated 1 at lock

EQUIPMENT OPERATING LOG

DATE: 2-1-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Open	0	.1	.1	N2Air	Shut	Shut	Shut
0900	0	"	"	"	1.2	.2	"	"	"	"
1000	20	"	"	"	1.1	.1	"	"	"	"
1100	0	"	"	"	1.1	.1	"	"	"	"
1200	"	"	"	"	1.0	.1	"	"	"	"
1300	"	"	"	"	1.0	.1	"	"	"	"
1400	"	"	"	"	1.0	.1	"	"	"	"
1500	"	"	"	"	.9	.1	"	"	"	"
1600	"	"	"	"	.8	.1	"	"	"	"
1700	"	"	"	"	.8	.1	"	"	"	"
1800	" "	"	"	"	2.0	.1	"	"	"	"
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Shut	Shut	Shut	Shut	Off	None	No flow	-	-	.1
1900	"	"	"	"	"	"	"	"	"	1.2
1000	"	"	"	"	"	"	"	"	"	1.1
1100	"	"	"	"	"	"	"	"	"	1.1
1200	"	"	"	" "	"	"	"	"	"	1.0
1300	" "	" "	"	"	"	"	"	"	"	1.0
1400	"	"	"	"	"	"	"	"	"	1.0
1500	"	"	"	"	"	"	"	"	"	.9
1600	"	"	"	"	"	"	"	"	"	.8
1700	"	"	"	"	"	"	"	"	"	.8
1800	"	"	"	"	"	"	"	"	"	2.0
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	74°			1500	-	76			
0900	-	74			1600	-	76			
1000	-	74			1700	-	76			
1100	-	75			1800	-	76			
1200	-	75			1900					
1300	-	75								
1400	-	75								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Open	0	.05	0.051	N2Air	Shut	Shut	Off
0900	"	"	"	"	1.0	0.05	"	"	"	"
1000	20	"	Shut	"	.8	4.0	"	"	"	Open
1100	0	"	"	"	.7	3.8	"	"	"	"
1200	0	"	"	"	.7	3.8	"	"	"	"
1300	"	"	"	"	.7	3.6	"	"	"	"
1400	"	"	"	"	.6	3.4	"	"	"	"
1500	" "	"	"	"	.6	3.4	"	"	"	"
1600	"	"	"	"	.5	3.2	"	"	"	"
1700	10	Shut	"	"	2.0	3.0	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Off	Off	Off	Off	Off	None	Off	-	-	.05
1900	"	"	"	"	"	"	"	"	"	1.0
1000	Open	Shut	Shut	Shut	"	STA-1	"	"	"	.8
1100	"	"	"	"	"	"	"	"	"	.7
1200	"	"	"	"	"	"	"	"	"	.7
1300	"	"	"	"	"	"	"	"	"	.7
1400	"	"	"	"	"	"	"	"	"	.6
1500	"	"	"	"	"	"	"	"	"	.6
1600	"	"	"	"	"	"	"	"	"	.5
1700	"	"	"	"	"	"	"	"	"	2.0
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75°			1500	-	76			
0900	-	75			1600	-	76			
1000	-	75			1700	-	76			
1100	-	75			1800					
1200	-	75			1900					
1300	-	76								
1400	- -	76								

EQUIPMENT OPERATING LOG

DATE: Feb. 3, 1965

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Off	Off	0	.1	.2	N_2 Air	Off	Shut	On
0900					3.0	.2				
1000					1.9	.2				
1100					1.8	.2				
1200					1.7	.2				
1300					2.0	.2				
1400					1.5	.2				
1500					1.4	.2				
1600					1.3	.2				
1700	10	Open	↓	↓	1.7	2.5	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	On	Off	Off	Off	Off	None	-	-	-	.1
1000										2.0
1000										1.9
1100										1.8
1200										1.7
1300										2.0
1400										1.5
1500										1.4
1600										1.3
1700	↓	↓	↓	↓	↓	↓	↓	↓	↓	1.7
1800										
1900										

TIME	Int. L.P.	M.B.Temp.			Int. L.P.	M.B.Temp.			
0800	-	76		1500	-	83			
0900		76		1600	-	90			
1000		76		1700	-	85			
1100		76		1800					
1200		76		1900					
1300		76							
1400	↓	77							

EQUIPMENT OPERATING LOG

DATE: Feb. 4, 1965

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N2Air	Shut	Shut	Open
0900	"	"	"	"	2.0	.1	"	"	"	"
1000	"	"	"	"	1.8	2.0	"	"	"	"
1100	"	"	"	"	1.7	2.0	"	"	"	"
1200	"	"	"	"	1.6	1.7	"	"	"	"
1300	"	"	"	"	2.0	1.5	"	"	"	"
1400	"	"	"	"	2.5	1.4	"	"	"	"
1500	"	"	"	"	2.4	.9	"	"	"	"
1600	"	"	"	"	2.0	.5	"	"	"	"
1700	"	"	"	"	2.5	.3	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Ster. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Sta-1	No Flow	-	-	.1
1900	"	"	"	"	"	"	"	"	"	2.0
1000	"	"	"	"	"	"	"	"	"	1.8
1100	"	"	"	"	"	"	"	"	"	1.7
1200	"	"	"	"	"	"	"	"	"	1.6
1300	"	"	"	"	"	"	"	"	"	2.0
1400	"	"	"	"	"	"	"	"	"	2.5
1500	"	"	"	"	"	"	"	"	"	2.4
1600	"	"	"	"	"	"	"	"	"	2.0
1700	"	"	"	"	"	"	"	"	20%	2.5
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900	-	75			1600	-	76			
1000	-	75			1700	-	76			
1100	-	75			1800					
1200	-	75			1900					
1300	-	75								
1400	-	76								

EQUIPMENT OPERATING LOG

DATE: Feb 5, 1965

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N2Air	Shut	Shut	Open
0900	"	"	"	"	2.0	2.0	"	"	"	"
1000	"	"	"	"	2.0	2.0	"	"	"	"
1100	"	"	"	"	2.0	2.0	"	"	"	"
1200	"	"	"	"	.6	2.0	"	"	"	"
1300	"	"	"	"	.6	2.0	"	"	"	"
1400	"	"	"	"	.6	1.9	"	"	"	"
1500	"	"	"	"	.6	1.8	"	"	"	"
1600	"	"	"	"	.6	1.7	"	"	"	"
1700	"	"	"	"	.6	2.5	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Sjut	Shut	Off	STA-1	Off	-	-	.1
1900	" "	"	"	"	"	"	"	"	32%	2.0
1000	"	"	"	"	"	"	"	"	-	2.0
1100	"	"	"	"	"	"	"	"	-	2.0
1200	"	"	"	"	"	"	"	"	"	.6
1300	" "	"	"	"	"	"	"	"	"	.6
1400	" "	"	"	"	"	"	"	"	"	.6
1500	"	"	"	"	"	"	"	"	"	.6
1600	"	"	"	"	"	"	"	"	"	.6
1700	"	"	"	"	"	"	"	"	"	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900	-	75			1600	-	77			
1000	-	75			1700	-	77			
1100	-	75			1800					
1200	-	75			1900					
1300	-	76								
1400	-	76								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N2 Air	Shut	Shut	Open
0900	"	"	"	"	.8	1.0	"	"	"	"
1000	"	"	"	"	.8	.9	"	"	"	"
1100	"	"	"	"	.7	.9	"	"	"	"
1200	"	"	"	"	.7	.9	"	"	"	"
1300	"	"	"	"	.6	.8	"	"	"	"
1400	"	"	"	"	.5	.7	"	"	"	"
1500	"	"	"	"	.4	.6	"	"	"	"
1600	"	"	"	"	.4	.5	"	"	"	"
1700	10	"	"	"	.2	1.0	"	"	"	"
1800	10	"	"	"	.2	1.0	"	"	"	"
1900	0	Shut	Open	"	.6	1.0	"	"	"	"

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	St A-1	No flow	-	-	.1
0900	"	"	"	"	"	"	"	"	"	.8
1000	"	"	"	"	"	"	"	"	"	.8
1100	"	"	"	"	"	"	"	"	"	.7
1200	"	"	"	"	"	"	"	"	"	.7
1300	"	"	"	"	"	"	"	"	"	.6
1400	"	"	"	"	"	"	"	"	"	.5
1500	"	"	"	"	"	"	"	"	"	.4
1600	"	"	"	"	"	"	"	"	"	.4
1700	"	"	"	"	"	"	"	"	"	.2
1800	"	"	"	"	"	"	"	"	"	.2
1900	"	"	"	"	"	"	"	"	"	.6

TIME	Int. L.P.	M.B. Temp.				Int. L.P.	M.B. Temp.			
0800	-	76°			1500	-	77			
0900	-	77			1600	-	85			
1000	-	77			1700	-	120			
1100	-	77			1800	-	110			
1200	-	77			1900	-	83			
1300	-	77								
1400	-	77								

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	open	0	.1	.1	N2Air	Shut	Shut	Open
0900	"	"	"	"	.4	2.0	"	"	"	"
1000	"	"	"	"	.2	1.0	"	"	"	"
1100	"	"	"	"	.2	.9	"	"	"	"
1200	"	"	"	"	.2	.9	"	"	"	"
1300	"	"	"	"	.2	.9	"	"	"	"
1400	"	"	"	"	.2	.8	"	"	"	"
1500	"	"	"	"	.2	.7	"	"	"	"
1600	"	"	"	"	.2	.6	"	"	"	"
1700	"	"	"	"	.3	3.0	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-2	NoFlow	-	-	.1
1900	"	"	"	"	"	"	"	"	"	.4
1000	"	"	"	"	"	"	"	"	"	.2
1100	"	"	"	"	"	"	"	"	"	.2
1200	"	"	"	"	"	"	"	"	"	.2
1300	"	"	"	"	"	"	"	"	"	.2
1400	"	"	"	"	"	"	"	"	"	.2
1500	"	"	"	"	"	"	"	"	"	.2
1600	"	"	"	"	"	"	"	"	"	.2
1700	"	"	"	"	"	"	"	"	"	.3
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900	-	75			1600	-	76			
1000	-	75			1700	-	76			
1100	-	75			1800					
1200	-	75			1900					
1300	-	76								
1400	-	76								

EQUIPMENT OPERATING LOG

DATE: Feb. 10,1965

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0700	0	Shut	Open	0	.1	.1	N2Air	Shut	Shut	Open
0900	"	"	"	"	.5	.1	"	"	"	"
1000	"	"	"	"	.4	.1	"	"	"	"
1100	"	"	"	"	.4	3.0	"	"	"	"
1200	"	"	"	"	.3	2.5	"	"	"	"
1300	"	"	"	"	.3	2.2	"	"	"	"
1400	"	"	"	"	.2	1.0	"	"	"	"
1500	"	"	"	"	.2	.8	"	"	"	"
1600	"	"	"	"	.2	.8	"	"	"	"
1700	"	"	"	"	.6	2.5	"	"	"	"
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-2	no flow	---	-	.1
1900	"	"	"	"	"	"	"	"	"	.5
1000	"	"	"	"	"	"	"	"	"	.4
1100	"	"	"	"	"	"	"	"	"	.4
1200	"	"	"	"	"	"	"	"	"	.3
1300	"	"	"	"	"	"	"	"	"	.3
1400	"	"	"	"	"	"	"	"	"	.2
1500	"	"	"	"	"	"	"	"	"	.2
1600	"	"	"	"	"	"	"	"	"	.2
1700	"	"	"	"	"	"	"	"	"	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900	-	75			1600	-	76			
1000	-	75			1700	-	76			
1100	-	75			1800	-				
1200	-	75			1900					
1300	-	76								
1400	-	76								

EQUIPMENT OPERATING LOG

DATE: Feb. 11, 1965

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Open	0	.1	.1	N2Air	Shut	Shut	Open
0900	"	"	"	"	.2	3.0	"	"	"	"
1000	"	"	"	"	.2	2.5	"	"	"	"
1100	"	"	"	"	.1	2.0	"	"	"	"
1200	"	"	"	"	.2	2.2	"	"	"	"
1300	"	"	"	"	.2	2.1	"	"	"	"
1400	"	"	"	"	.2	1.9	"	"	"	"
1500	"	"	"	"	.2	1.7	"	"	"	"
1600	"	"	"	"	.3	1.6	"	"	"	"
1700	"	"	"	"	.3	1.0	"	"	"	"
1800	"	"	Shut	"	.5	3.5	"	"	"	"
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	STA-2	No flow	-	-	.1
0900	"	"	"	"	"	"	"	"	"	.2
1000	"	"	"	"	"	"	"	"	"	.2
1100	"	"	"	"	"	"	"	"	"	.1
1200	"	"	"	"	"	"	"	"	"	.2
1300	"	"	"	"	"	"	"	"	"	.2
1400	"	"	"	"	"	"	"	"	"	.2
1500	"	"	"	"	"	"	"	"	"	.2
1600	"	"	"	"	"	"	"	"	"	.3
1700	"	"	"	"	"	"	"	"	"	.3
1800	"	"	"	"	"	"	"	"	"	.5
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900	-	75			1600	-	76			
1000	-	75			1700	-	76			
1100	-	75			1800	-	76			
1200	-	75			1900					
1300	-	76								
1400	-	76								

EQUIPMENT OPERATING LOG

M-56-65-1
Vol. II
DATE: 2-12-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.1	.1 N	N_2 Air	Shut	Shut	Open
0900					.4	.6				
1000					.3	.6				
1100					.4	.6				
1200					.4	.6				
1300					.4	.6				
1400					.4	.6				
1500					.5	.6				
1600					.6	.6				
1700					.3	.5				
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	Gt. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.
0800	Open	Shut	Shut	Shut	Off	N_2 Air	No Flow	-	24%	.1
0900								-	-	.4
1000								-	30%	.3
1100								-	-	.4
1200								-	-	.4
1300								-	-	.4
1400								-	-	.4
1500								-	-	.5
1600								-	-	.6
1700								-	-	.3
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900		75			1600	-	76			
1000		75			1700	-	75			
1100		75			1800					
1200		75			1900					
1300		76								
1400		76								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.1	.1	N_2 Air	Shut	Shut	Open
0900	↓	↓	↓	↓	.4	1.0	↓	↓	↓	↓
1000	↓	↓	↓	↓	.3	.8	↓	↓	↓	↓
1100	↓	↓	↓	↓	.3	.7	↓	↓	↓	↓
1200	↓	↓	↓	↓	.3	.6	↓	↓	↓	↓
1300	↓	↓	↓	↓	.3	.5	↓	↓	↓	↓
1400	↓	↓	↓	↓	.3	.5	↓	↓	↓	↓
1500	↓	↓	↓	↓	.3	.5	↓	↓	↓	↓
1600	↓	↓	↓	↓	.3	.5	↓	↓	↓	↓
1700	↓	↓	↓	↓	.3	1.5	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air N_2	No Flow	-	-	.1
0900	↓	↓	↓	↓	↓	↓	↓	-	-	.4
1000	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1100	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1200	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1300	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1400	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1500	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1600	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1700	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	73			1500	-	75			
0900	-	73			1600	-	75			
1000	-	73			1700	-	75			
1100	-	74			1800					
1200	-	74			1900					
1300	-	74								
1400	-	74								

EQUIPMENT OPERATING LOG

DATE 2-16-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Shut	Shut	0	.1	.1	N_2 Air	Shut	Shut	Open
0900	↓	↓	↓	↓	.3	.6	↓	↓	↓	↓
1000					.3	.5				
1100					.3	.4				
1200					.3	.4				
1300					.4	.4				
1400			↓		.4	.3				
1500		↓	Open		.3	.3			↓	
1600		Open	Open		.2	.3				
1700		Open	Shut		.2	1.0				
1800	↓	Open	Shut	↓	.2	1.2	↓	↓	↓	↓
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start. B.P. Pos.	Pump	On Serv.	M.S.A.	MTO %	H_2O %	Int. L.P.
0800	Open	Shut	Shut	Shut	Off	N_2 Air	No Flow	-	-	.1
0900	↓	↓	↓	↓	↓	↓		-	-	.3
1000								-	-	.3
1100								-	-	.3
1200								-	-	.3
1300								-	-	.4
1400								-	-	.4
1500								-	-	.3
1600								-	-	.2
1700								-	-	.2
1800	↓	↓	↓	↓	↓	↓	↓	-	-	.2
1900										

TIME	Int. L.P.	M.B. Temp.				Int. L.P.	M.B. Temp.			
0800	-	73			1500	-	77			
0900	-	74			1600	-	77			
1000	-	74			1700	-	77			
1100	-	74			1800	-	77			
1200	-	75			1900					
1300	-	75								
1400	-	76								

EQUIPMENT OPERATING LOG

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.4	N_2 Air	Shut	Shut	Open
0900					.1	.4				
1000					.4	.4				
1100					.4	.4				
1200					.3	.4				
1300					.3	.4				
1400					.3	.4				
1500					.3	.5				
1600					.3	.5				
1700					.2	.6				
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
1900								-	28	.1
1000								-	-	.4
1100								-	-	.4
1200								-	-	.3
1300								-	-	.3
1400								-	-	.3
1500								-	-	.3
1600								-	-	.3
1700								-	40	.2
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	77			
0900	-	75			1600	-	78			
1000	-	76			1700	-	78			
1100	-	76			1800					
1200	-	77			1900					
1300	-	77								
1400	-	77								

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.4	N_2 Air	Shut	Shut	Open
0900					.4	.3				
1000					.3	.3				
1100					.3	.3				
1200					.3	.3				
1300					.3	.3				
1400					.4	.3				
1500					.4	.4				
1600					.4	.4				
1700	.4	Open	Shut		.6	2.0				
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	NO_2 %	H_2O %	Int. L.P.
0800	OPEN	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
1900								-	-	.4
1000								-	-	.3
1100								-	-	.3
1200								-	-	.3
1300								-	-	.3
1400								-	-	.4
1500								-	-	.4
1600								-	-	.4
1700								-	-	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	74			1500	-	76			
0900	-	74			1600	-	77			
1000	-	75			1700	-	77			
1100	-	75			1800					
1200	-	75			1900					
1300	-	76								
1400	-	76								

EQUIPMENT OPERATING LOG

DATE: 2-19-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N_2 Air	Shut	Shut	Open
0900					.4	.3				
1000					.4	.4				
1100					.3	.4				
1200					.3	.4				
1300					.3	.4				
1400					.3	.4				
1500					.3	.5				
1600					.3	.5				
1700					.3	.5				
1800					.3	3.0				
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	N_2 Air	-	-	.1
1900								-	-	.4
1000								-	-	.4
1100								-	-	.3
1200								-	-	.3
1300								-	-	.3
1400								-	-	.3
1500								-	-	.3
1600								-	-	.3
1700								-	-	.3
1800										
1900										

TIME	Int. L.P.	M.B.Temp			Int. L.P.	M.B.Temp.
0800	-	74		1500	-	76
0900	-	74		1600	-	76
1000	-	75		1700	-	76
1100	-	75		1800	-	76
1200	-	75		1900		
1300	-	75				
1400	-	76				

EQUIPMENT OPERATING LOG

DATE: 2-22-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N_2 Air	Shut	Shut	Open
0900					.4	1.0				
1000					.2	.8				
1100					.3	.8				
1200					.3	.8				
1300					.3	.6				
1400					.3	.6				
1500					.4	.6				
1600					.4	.5				
1700	↓	↓	↓	↓	.4	.5	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Start B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
1900	↓	↓	↓	↓	↓	↓	↓	-	-	.4
1000								-	-	.2
1100								-	-	.3
1200								-	-	.3
1300								-	-	.3
1400								-	-	.3
1500								-	-	.4
1600								-	-	.4
1700	↓	↓	↓	↓	↓	↓	↓	-	-	.4
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	75			1500	-	76			
0900	-	75			1600	-	77			
1000	-	75			1700	-	77			
1100	-	75			1800					
1200	-	75			1900					
1300	-	75								
1400	-	76								

EQUIPMENT OPERATING LOG

DATE: 2-23-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N_2 Air	Shut	Shut	Open
0900	↓	↓	↓	↓	.3	1.0	↓	↓	↓	↓
1000	↓	↓	↓	↓	.2	.8	↓	↓	↓	↓
1100	↓	↓	↓	↓	.2	.8	↓	↓	↓	↓
1200	↓	↓	↓	↓	.3	.6	↓	↓	↓	↓
1300	↓	↓	↓	↓	.3	.6	↓	↓	↓	↓
1400	↓	↓	↓	↓	.3	.6	↓	↓	↓	↓
1500	↓	↓	↓	↓	.3	.5	↓	↓	↓	↓
1600	↓	↓	↓	↓	.3	.4	↓	↓	↓	↓
1700	↓	↓	↓	↓	.6	1.0	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Star. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
0900	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1000	↓	↓	↓	↓	↓	↓	↓	-	-	.2
1100	↓	↓	↓	↓	↓	↓	↓	-	-	.2
1200	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1300	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1400	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1500	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1600	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1700	↓	↓	↓	↓	↓	↓	↓	-	-	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp				Int. L.P.	M.B.Temp.			
0800	-	74			1500	-	76			
0900	-	74			1600	-	76			
1000	-	74			1700	-	76			
1100	-	74			1800					
1200	-	75			1900					
1300	-	75								
1400	-	75								

EQUIPMENT OPERATING LOG

DATE: 2-24-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open N	Shut	0	.1	.1	N Air	Shut	Shut	Open
0900	↓	↓	↓	↓	.6	.4	↓	↓	↓	↓
1000					.4	.4				
1100					.4	.4				
1200					.3	.4				
1300					.2	.4				
1400					.2	.4				
1500					.2	.4				
1600					.2	.4				
1700	↓	↓	↓	↓	.6	1.0	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Ster. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
1900	↓	↓	↓	↓	↓	↓	↓	-	-	.6
1000								-	-	.4
1100								-	-	.4
1200								-	-	.3
1300								-	-	.2
1400								-	-	.2
1500								-	-	.2
1600								-	-	.2
1700	↓	↓	↓	↓	↓	↓	↓	-	-	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	74			1500	-	76			
0900	-	74			1600	-	76			
1000	-	74			1700	-	76			
1100	-	75			1800					
1200	-	75			1900					
1300	-	75								
1400	-	75								

EQUIPMENT OPERATING LOG

DATE: 2-25-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.1	N_2 Air	Shut	Shut	Open
0900	↓	↓	↓	↓	.4	.3	↓	↓	↓	↓
1000	↓	↓	↓	↓	.4	.3	↓	↓	↓	↓
1100	↓	↓	↓	↓	.4	.3	↓	↓	↓	↓
1200	↓	↓	↓	↓	.3	.3	↓	↓	↓	↓
1300	↓	↓	↓	↓	.3	.2	↓	↓	↓	↓
1400	↓	↓	↓	↓	.3	.2	↓	↓	↓	↓
1500	↓	↓	↓	↓	.3	.2	↓	↓	↓	↓
1600	↓	↓	↓	↓	.3	.2	↓	↓	↓	↓
1700	↓	↓	↓	↓	.6	1.0	↓	↓	↓	↓
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stor. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
1900	↓	↓	↓	↓	↓	↓	↓	-	-	.4
1000	↓	↓	↓	↓	↓	↓	↓	-	-	.4
1100	↓	↓	↓	↓	↓	↓	↓	-	-	.4
1200	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1300	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1400	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1500	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1600	↓	↓	↓	↓	↓	↓	↓	-	-	.3
1700	↓	↓	↓	↓	↓	↓	↓	-	-	.6
1800										
1900										

TIME	Int. L.P.	M.B. Temp				Int. L.P.	M.B. Temp.			
0800	-	74			1500	-	76			
0900	-	74			1600	-	77			
1000	-	74			1700	-	77			
1100	-	74			1800					
1200	-	75			1900					
1300	-	75								
1400	-	76								

EQUIPMENT OPERATING LOG

DATE: 2-26-65

TIME	Purge Gas P.	Sta. 1 Pos.	Sta. 2 Pos.	Flow	Main B.P.	Small B.P.	Sel. V Posit.	Return Valve Pos.	Supply Valve Pos.	Filter S.O. Pos.
0800	0	Open	Shut	0	.1	.3	N_2 Air	Shut	Shut	Open
0900					.4	.3				
1000					.3	.3				
1100					.3	.3				
1200					.3	.3				
1300					.3	.3				
1400					.3	.3				
1500					.3	.3				
1600					.3	.3				
1700					.6	.8				
1800										
1900										

TIME	N_2 Pos.	FLBP Pos.	St. Pos.	Stcr. B.P. Pos.	Pump	On Serv.	M.S.A.	ETO %	H_2O %	Ent. L.P.
0800	Open	Shut	Shut	Shut	Off	Air	No Flow	-	-	.1
1900								-	-	.4
1000								-	-	.3
1100								-	-	.3
1200								-	-	.3
1300								-	-	.3
1400								-	-	.3
1500								-	-	.3
1600								-	-	.3
1700								-	-	.6
1800										
1900										

TIME	Int. L.P.	M.B.Temp.				Int. L.P.	M.B.Temp.			
0800	-	74			1500	-	77			
0900	-	75			1600	-	77			
1000	-	75			1700	-	77			
1100	-	76			1800					
1200	-	76			1900					
1300	-	76								
1400	-	76								